The User Interface

This section explains how to use Window features like pull-down menus and dialog boxes to work with BREEZE. Keyboard instructions for navigation on the screen are also included.

Ribbon Bar

The Ribbon Bar contains all the menu items, buttons, and functions that BREEZE AERMOD/ISC uses to display and process data. Selecting a menu item will either toggle a property On/Off, execute a function, or open a dialog box.

The Ribbon Bar consists of an Application Menu, Quick Access Toolbar, and Tabs or Display Views.

The following sections provide brief descriptions of all the items contained in AERMOD/ISC's Ribbon Bar. References are provided to corresponding toolbar buttons, hot keys, and dialog boxes.

Note 1: Each tab has it's own set of menus and options. The Ribbon Bar for each display view will only be displayed when the respective display view is selected (active).

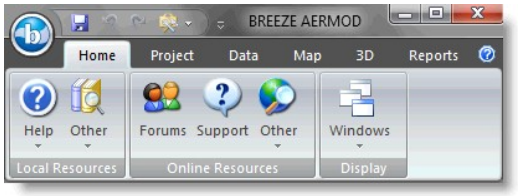
Note 2: In order to provide quick access to key information, common menu items and dialog functions standard to most Microsoft Windows applications may not be fully described in this User's Guide. For example, we assume that the standard File Open dialog is familiar and self explanatory. Please utilize Microsoft Windows help files if additional information is needed on standard Windows functions and operations.

List of Tabs

Menu	Description
Home	Product information, helpful links, company information, and other user information.
Project	General project input dialogs and the Warnings/Errors View.
Data	Functions unique to the Data Explorer and Spreadsheet View.
Map	Functions unique to the 2D Map GIS View.
3D	Functions unique to the 3D View.
Reports	Functions unique to the Reports View.

Home

BREEZE AERMOD/ISC opens to the Home tab automatically when the program is started. This view accesses the BREEZE web site which contains quick access product information including general help resources, identification of the current software version, tool tips and tricks, upcoming training courses and identification of current EPA approved regulatory versions. You are encouraged to visit this page regularly, as information will be updated frequently. An internet connection is required to retrieve the Home display view. If an internet connection is not available, an information message will be displayed.



Home Tab Ribbon Bar

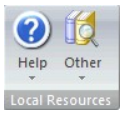
Groups on the Home Ribbon Bar

Local Resources: Contains help manual and additional references files

Online Resources: Additional resources for technical support questions

Display: Select the single or multiple windows view

Local Resources

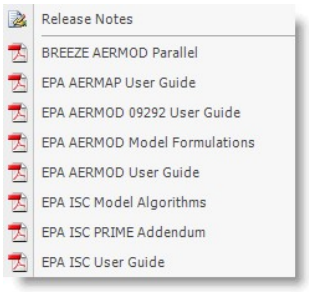


The Local Resources group provides access to the User's Guide and other resources that users may find helpful while using the product.

Help

This is a multi-function button. Selecting the question mark icon will open up the BREEZE AERMOD/ISC User's Guide. The drop-down menu has links to certain sections within the User's Guide to provide quick access for users.

Other



Other Menu

This menu has links to valuable resources users might need to call upon while performing a modeling analysis. This includes the U.S. EPA documentation in Adobe .pdf format and a list of release notes. Adobe Acrobat Reader is required to view .pdf files.

Item	Description
Release Notes	Opens a text file using your computers default text editor that describes changes to AERMOD/ISC by version number.
BREEZE AERMOD Parallel	Opens the instructions for installation of BREEZE AERMOD Parallel.
EPA AERMAP User Guide	Opens the U.S. EPA's AERMAP User Guide.
EPA AERMOD 09292 User Guide	Opens the addendum to the U.S. EPA's AERMOD User Guide for the 09292 version.
EPA AERMOD Model Formulations	Opens the U.S. EPA's AERMOD Model Formulations Guide that provides a theoretical discussion about the model.
EPA AERMOD User Guide	Opens the previous version of the U.S. EPA's AERMOD User Guide with documentation on the 07026 and 04300 versions.
EPA ISC Model Algorithms	Opens the U.S. EPA's ISC Model Algorithm documentation that provides a theoretical discussion about the model.
EPA ISC PRIME Addendum	Opens the addendum to the U.S. EPA's ISC User Guide with documentation on the PRIME downwash algorithms.
EPA ISC User Guide	Opens the U.S. EPA's ISC User Guide.

Online Resources

The Online Resources group contains links to technical support through the BREEZE website.

Forums

NOTE: Online Forums will debut on the BREEZE website in 2009.

The forums will be a place for users to interact with BREEZE technical support staff and other users. Divided by product, users can post threads with questions regarding specific features related to BREEZE products and other users can provide responses (in addition to replies from BREEZE technical support).

Support

This button will take users directly to the BREEZE technical support webpage. This page contains contact information and forms for users to submit questions directly to BREEZE.

Other

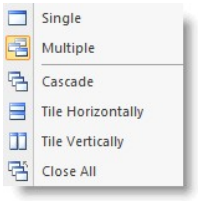
This menu contains web links to BREEZE websites.

Display

The Display group allows users to select how display views will be arranged and provides a standard mechanism to arrange all the display views.

BREEZE AERMOD/ISC has two ways of displaying the display views.

1. Single Window Mode - This option displays one display view at a time. This option saves computing power by only loading the visible view when changes are made the project.
2. Multiple Windows Mode - Display views can be tiled horizontally and vertically, and cascaded. This interface option allows all display windows to be viewed simultaneously. Display views can be closed using the "X" button which can be found in the upper right corner of each display view.

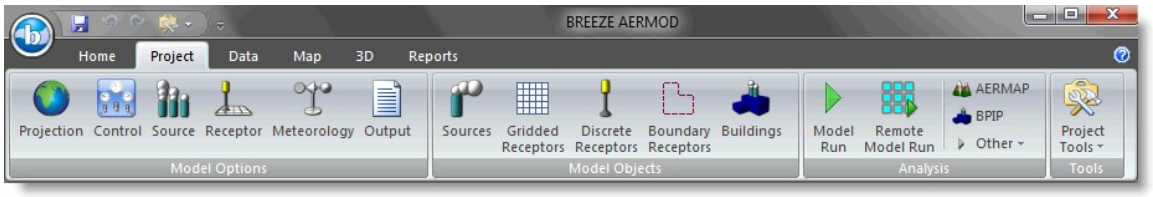


Display Menu in Multiple Windows Mode

Item	Description
Cascade	Organizes open display windows in such a way that they overlap each other.
Tile Horizontally	Organizes open display windows in such a way that they each are sized to show the entire display window with horizontal placement.
Tile Vertically	Organizes open display windows in such a way that they each are sized to show the entire display window with vertical placement.
Close All Windows	Closes all open windows.

Project

The Project tab contains groups for general input information needed by AERMOD.



Project Tab Ribbon Bar

Groups on the Project Ribbon Bar

Model Options: Access to each of the model options in the AERMOD input file

Model Objects: Provide quick access to add model objects to the open project through the use of dialog boxes

Analysis: Options to run the model and associated preprocessor programs

Tools: Access to the productivity tools in BREEZE AERMOD/ISC

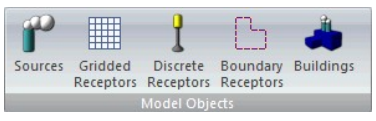
Each of these groups are also accessible from the other tabs in the interface. The Options, Objects, and Analysis groups (and their associated menus) are found as drop-down menus in the Data, Map, 3D, and Reports tabs. The Tools group is always available from the Quick Access Toolbar.

Model Options

Buttons for each of the model options within AERMOD are located in this group.

Item	Description
Projection...	Opens the Project Options form where the geographic projection of the modeling domain can be set.
Control Options...	Opens the Control Options form where basic options instructing the model how to process the data are set.
Source Options...	Opens the Source Options form where source grouping and other options can be set.
Receptor Options...	Opens the Receptor Options form where options specific to receptors can be set.
Meteorology Options...	Opens the Meteorology Options form where the model ready meteorological files can be specified.
Output Options...	Opens the Output Options form where output files and data tables can be selected.

Model Objects

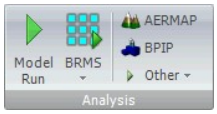


Buttons for adding model objects to your current project are located in this group.

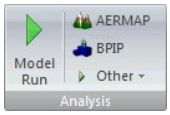
Item	Description
Sources...	Opens the source data entry form.
Gridded Receptors...	Opens the gridded receptor data entry form.
Discrete Receptors...	Opens the discrete receptor data entry form.

Boundary Receptors...	Opens the boundary receptor data entry form.
Buildings...	Opens the building data entry form.

Analysis



Analysis Group in AERMOD Mode



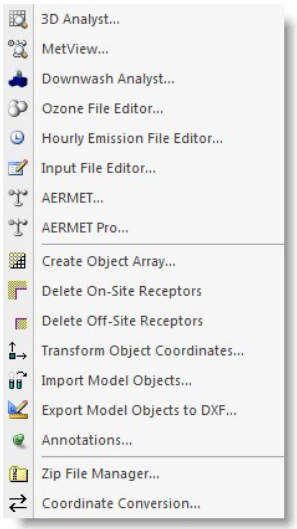
Analysis Group in ISC Mode

This group contains buttons for starting model runs and running associated programs (e.g. AERMAP, BPIP).

Item	Description
Model Run	Select to launch the BREEZE Dashboard for subsequent execution of the Fortran model.
BRMS	Available in AERMOD. Select to launch the BREEZE Remote Model Run dialog for execution of the BREEZE AERMOD Parallel model on the BREEZE Remote Modeling System. Users can submit runs one at a time or batch multiple runs together in a single submittal.
AERMAP Model Run	Select to run the AERMAP executable. A successful AERMAP run will import elevations and hill height scales for all selected model objects in a project.
BPIP Model Run	Select to run the BPIP-Prime Fortran executable. A successful BPIP run will create the necessary building parameters for stack type sources when buildings are being modeled.
Schedule Runs	Available in AERMOD. Select to perform multiple AERMOD runs sequentially.
Event Model Run	Select to run the model in Event mode. An Event file must be present to run successfully. Event files are created as a result of a successfully model run if a request has been made to create an Event file.

Tools

The Tools Menu contains the productivity tools available in BREEZE AERMOD/ISC.

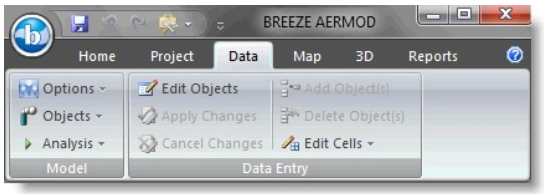


Item	Description
3D Analyst	If installed, will launch the BREEZE 3D Analyst application to display output results.
MetView	Launches the meteorological data viewer and windrose application.

Downwash Analyst	Launches the BREEZE Downwash Analyst for evaluating building downwash zones.
Ozone File Editor	Launches the ozone file editor which will allow you to create and edit ozone input files for use with the Ozone options in the Control Options form.
Hourly Emission File Editor	Launches the editor that assist in creating hourly emission files.
Input File Editor	Launches the editor that allows the user to edit the ASCII AERMOD input file directly.
AERMET	Only available in AERMOD. Launches the AERMET "Lite" application for creating model-ready meteorological data from .MRG files.
AERMET Pro	Only available in AERMOD. Launches AERMET Pro, the full BREEZE AERMET application.
Create Object Array...	Launches the tool that allows for the creation of multiple model objects with the same parameters but at varying distances along the x and y axes.
Delete On-Site Receptors	Select to remove receptors from within boundary receptors.
Delete Off-Site Receptors	Select to remove receptors from outside boundary receptors.
Transform Object Coordinates...	To change the coordinates of multiple model objects by the same amount (e.g., shifting, rotating).
Import Model Objects...	Allows the importation of model objects, including sources, receptor grids, discrete receptors, boundary receptors and buildings from other projects.
Export Model Objects to DXF	Launches the wizard to export model objects to a DXF file.
Annotations	Launches the option for adding non-model-related objects to a project.
Zip File Manager...	Launches the utility to manage input and output files associated with the model scenario.
Coordinate Conversion...	Launches the tool that allows for conversion between coordinate systems (e.g., UTM and Latitude/Longitude).

Data Explorer

The Data tab contains options for modifying model objects within the Data Explorer / Spreadsheet display view.

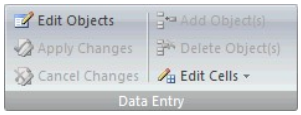


Groups on the Data Ribbon Bar:

Model: Contains menus with options from the Project Ribbon Bar

Data Entry: Tools for adding, removing, and editing model objects in the data display view.

Data Entry



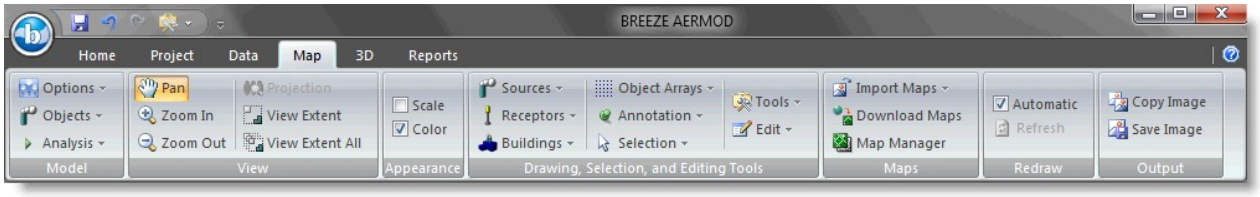
The Data Entry group contains tools for adding, removing, and modifying model objects in the data display view.

NOTE: The Data display view remains locked unless the Edit Objects option is selected. Once selected, users cannot leave the Data display view without Applying or Canceling changes all made.

Item	Description
Edit Objects	Select to enable the ability to edit model object data in the spreadsheet.
Apply Changes	Select to accept the changes made to the spreadsheet.
Cancel Changes	Cancel any changes that were made to the spreadsheet and revert to the data in the spreadsheet prior making any edits.
Add Object(s)	Add new objects to the spreadsheet.
Delete Object(s)	Remove selected objects from the spreadsheet.
Edit Cells	Functions for copying, pasting, and deleting data from the spreadsheet.

Map

The Map tab contains options for working in the two-dimensional Map display view. This includes options for viewing, drawing to, selecting objects in, and applying base maps.



Groups on the Map Ribbon Bar

Model: Contains menus with options from the Project Ribbon Bar

View: Contains navigation tools for maneuvering the Map display window

Appearance: Handles how the Map display view appears in the main window

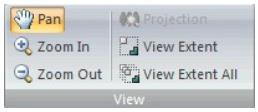
Drawing, Selection, and Editing Tools: Tools for adding, editing, and selecting model objects

Maps: Tools for adding and controlling base maps in the Map view

Redraw: Handles whether the Map display view refreshes automatically or manually

Output: Functions for copying or saving the currently displayed Map view

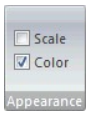
View



Tools for navigating the Map display view are included in this group.

Item	Description
Pan	Select the Pan (Grabber) button to pan or reposition a map within its window.
Zoom In	Select the Zoom-in button to zoom in on the map view.
Zoom Out	Select the Zoom-out button to zoom out on the map view.
Projection...	Select the Set View Projection button to specify the projection under which the Map view will be displayed. If the user doesn't specify the projection used for model objects, which means under Menu - Input - Projection, the Relative projection is selected, the Set View Projection feature will not be available. The model object projection and view projection don't always have to be the same. The user can choose to display model objects in the Map view under different projections. In the Map view, if the user moves the mouse around, the X/Y coordinates associated with the mouse position will be displayed in the tool bar. These X/Y values are based on the View Projection, rather than the model object projection, if they're different.
View Extent	Select the View Extent button to display all modeling objects within the map window.
View Extent All	Select the View Extent All button to view all objects on the Map View including any background maps.

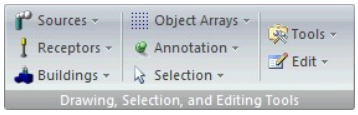
Appearance



The Appearance group controls two options:

1. **Scale**: Selecting this check box will place a scale bar in the Map display view. The bar is automatically rescaled whenever the user zooms in or out.
2. **Color**: This option toggles on the color of model objects in the Map display view. The option is checked by default. Selecting this will not affect any base maps imported into the Map view.

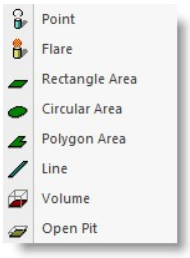
Drawing, Selection, and Editing Tools



The options available in this group control adding, selecting, and editing model objects in the Map display view.

Sources

To draw a source in the Map view, the user selects a source type from the Drawing... | Sources menu.



Sources Menu

Model Object	Description	Mouse Click Method
Point / Cap / Horizontal Source	Used to add a point source to the current project on the Map view. You can change the Point Source to a Capped or Horizontal Point source from within the form that gets displayed.	**Click once**
Flare Source	Used to add a flare source to the current project on the Map view. This source type can only be run using the BREEZE Enhanced FORTRAN executable. NOTE: This source type is **only available in the Pro and Pro Plus versions** of BREEZE AERMOD/ISC. To upgrade your version, contact us.	**Click once**
Rectangular Area Source	Used to add a rectangular area source to the current project on the Map view.	**3 Clicks**
Circular Area Source	Used to add a circular area source to the current project on the Map view.	**Click, hold and drag**
Polygon Area Source	Select the Polygon Area Source icon to add a polygonal area source to the current project on the Map view.	**Multiple clicks**
Line Source	Used to add a line source to the current project on the Map view. This source type can only be run using the BREEZE Enhanced FORTRAN executable. NOTE: This source type is **only available in the Pro and Pro Plus versions** of BREEZE AERMOD/ISC. To upgrade your version, contact us.	**Two clicks**
Volume Source	Used to add a volume source to the current project on the Map view.	**Click, hold and drag**
Open Pit Source	Used to add an open pit to the current project on the Map view.	**3 Clicks**

Receptors

To draw a discrete receptor or gridded receptor network in the Map view, the user selects a source type from the Drawing... | Receptors menu.

Receptors Menu

Model Object	Description	Mouse Click Method
Cartesian Receptor Grid	Used to add a Cartesian gridded receptor network to the current project on the Map view.	**Click, hold and drag**
Polar Receptor Grid	Used to add a polar grid to the current project on the Map view.	**Click, hold and drag**
Discrete Receptor	Used to add a discrete receptor to the current project on the Map view.	**Click once**
Boundary Receptor	Used to draw a series of connected discrete receptors at selected coordinates in the Map view.	**Multiple clicks**

Buildings

To add buildings in the Map view, the user selects a source type from the Drawing... | Buildings menu.

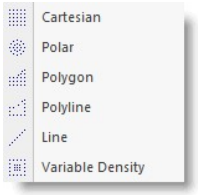
Buildings Menu

Model Object	Description	Mouse Click Method
Rectangular Building	Used to add a rectangular building to the current project on the Map view.	**3 Clicks**
Circular Building	Used to add a tank or circular building to the current	**Click, hold and**

	project on the Map view.	**drag**
Polygon Building	Used to add a polygonal building to the current project on the Map view.	**Multiple clicks**

Object Arrays

In BREEZE AERMOD/ISC, users can add object arrays. These can be used to add multiple objects (e.g. sources, receptors, buildings) in specific arrangements. To add an object array in the Map view, the user selects an array type from the Drawing... | Object Arrays menu.



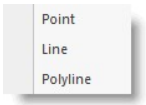
Object Arrays Menu

Model Object	Description	Mouse Click Method
Cartesian Object Array	Used to add an array of discrete model objects (source, discrete receptor, or building) in the form of a Cartesian grid to the current project.	**Click, hold and drag**
Polar Object Array	Used to add an array of discrete model objects (source, discrete receptor, or building) in the form of a polar grid to the current project.	**Click, hold and drag**
Polygon Object Array	Used to add an array of discrete model objects (source, discrete receptor, or building) in the form of a polar grid to the current project.	**Multiple clicks**
Polyline Object Array	Used to add an array of discrete model objects (source, discrete receptor, or building) in the form of a polyline to the current project.	**Multiple clicks**
Line Object Array	Used to add an array of discrete model objects (source, discrete receptor, or building) in the form of a line to the current project.	**Two clicks**
Variable Density Grid Array	Used to add an array of discrete model objects (source, discrete receptor, or building) in the form of a variable density grid to the current project.	**Click, hold and drag**

Annotation

NOTE: The Annotation object is **only available in the Pro and Pro Plus versions** of BREEZE AERMOD/ISC. To upgrade your version, contact us.

Annotation objects are a new feature to BREEZE AERMOD/ISC. These are non-model-related objects that can be used to better identify points, lines, or areas in the Map view. These objects will have no affect upon modeling results and are for visualization and communication purposes only.

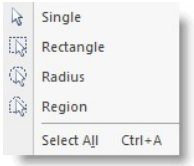


Annotation Menu

Model Object	Description	Mouse Click Method
Point Annotation	Used to add a single point annotation to the Map view.	**Click once**
Line Annotation	Used to add an annotation of a straight line to the Map view.	**Two clicks**
Polyline Annotation	Used to add an annotation of a polygon area or line with multiple vertices to the Map view.	**Multiple clicks**

Selection

The selection menu provides tools for selecting one or more model objects in the Map view.



Selection Menu

Selection Tool	Description	Mouse Click Method
Single	Used to select a single model object in the Map view.	**Click once**
Rectangle	Used to select multiple model objects within a rectangular area in the Map view.	**3 clicks**
Radius	Used to select multiple model objects within a circular area in the Map view.	**Click, hold and drag**
Region	Used to select multiple model objects within a polygon area in the Map view.	**Multiple clicks**
Select All	Selects all model objects within the Map view.	

Tools

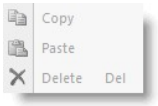
The Tools menu contains other useful tools such as identification, measurement, and move functionality users may wish to run within the Map view.

Tools Menu

Tool	Description	Mouse Click Method
Information	Displays information for a single model object (e.g. source ID, x- & y-coordinates, elevation)	**Click once**
Ruler	Used to measure distance between two points in the Map view.	**Two clicks**
Move	Used to move selected model objects from one point to another. This tool will only move objects AFTER they have been selected.	**Click, hold and drag**

Edit

The Edit menu allows users to copy, paste, or delete model objects from the project. The functions are only applied to objects currently selected within the Map view.



Edit Menu

Mouse Click Methods

Creating model objects within Map View is performed by a series of mouse clicks. There are four basic methods. Each method is described here.

Click once:

1. Select the model object from the toolbar.
2. Place the cursor over the location you would like to center the model object.
3. Click with your left mouse button.
4. The model object form will be open and now contain the coordinates of the location selected using the mouse cursor.

Multiple clicks (polygon model objects):

1. Select the model object from the toolbar.
2. Left mouse click all of the corners of your polygon model object.
3. Double click the last corner. This will close the polygon and display the model object data entry form.

Two clicks:

1. Select the model object from the toolbar.
2. Left mouse click the start and end positions of the line.

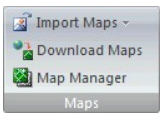
Three clicks (rectangular model objects):

1. Select the model object from the toolbar.
2. Place the cursor over the location you would like to start one of the corners of the model object and click the left mouse button. This first click is usually identified as the southwest corner of the model object.
3. Move your mouse to the location of the adjacent corner and click the left mouse button. This will define the X length of your rectangular model object.
4. Move your mouse at a right angle from the location of the last mouse click (you will be restricted to a right angle since this is a rectangular model object) and click the left mouse button. This side will define the Y length of your rectangular model object.

Click, hold, and drag:

1. Select the model object from the toolbar.
2. Click and hold the left mouse button down at the location of the southwest corner for rectangular Cartesian grids or the center for polar model objects.
3. Drag your mouse while holding the left mouse button down until the desired dimensions are obtained.
4. Release the mouse button.

Maps



The Maps group has tools for importing and controlling basemaps in the two-dimensional Map view.

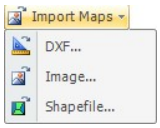
Menus in the Maps Group

Import Maps: Wizard for importing base maps to the Map view.

Download Maps: Tool for downloading terrain and map images from Microsoft Terraserver.

Map Manager: Tool for creating and managing the appearance of base maps imported to the Map view.

Import Maps



The Import Maps menu has three options:

1. DXF files,
2. Images, and
3. Shapefiles

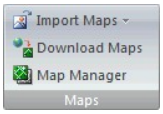
Import DXF

AutoCAD DXF (Drawing Interchange Format, or Drawing Exchange Format) is a CAD data file format, developed by Autodesk as their solution for enabling data interoperability between AutoCAD and other programs.

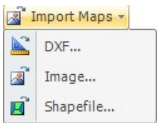
Base maps can also be imported and removed using the Map Manager tool.

To import a DXF file

1. From either the Map or 3D Tab, select *Import Maps* from the Maps group



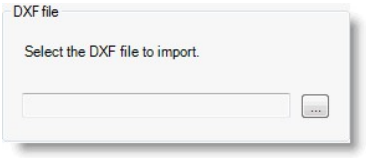
2. Select the *DXF...* item.



The BREEZE Import wizard will guide the user through each step of importation.

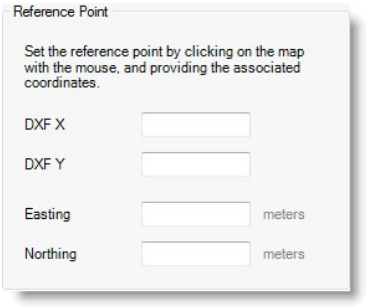
Step 1: DXF file

Select the DXF file you want to import by clicking on the button in the DXF file group box, the DXF file will be displayed in the Preview group box.



Step 2: Reference Point

A location on the DXF map must be referenced with a location in the modeling domain. Click a known position on the DXF map with the left mouse button. This position's coordinates will be displayed in the DXF X and DXF Y text boxes.



DXF X: X coordinate of the selected position on the DXF map.

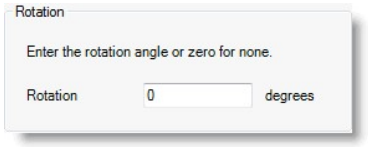
DXF Y: Y coordinate of the selected position on the DXF map.

Easting: The coordinate of easting for the selection position on the DXF map.

Northing: The coordinate of northing for the selection position on the DXF map.

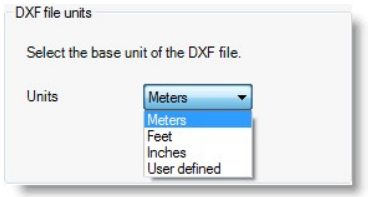
NOTE: The DXF file reference point coordinates must be based on the same coordinate system used by model object.

Step 3: Rotate



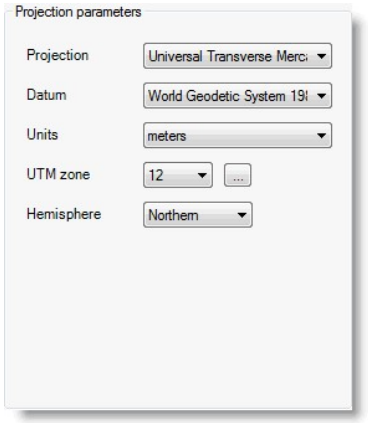
Rotation: Enter the desired rotation angle, if any. A positive number will rotate the map clockwise, a negative number, counterclockwise.

Step 4: Units



Units: Specify the units that the DXF is measured in. By default, the meters unit is selected. This is not necessarily the appropriate unit for the imported DXF.

Step 5: Projection



UTM zone: The UTM zone in which the DXF image is located. Only necessary if the model object projection is set to UTM.

Hemisphere: The Hemisphere in which the DXF image falls. Only necessary Only necessary if the model object projection is set to UTM.

Import Image

BREEZE AERMOD/ISC can import many common GIS image formats including .bmp, .jpg, and .tif files. The ability to import image or raster based datasets (e.g., aerial photos) into AERMOD provides the user with extremely powerful visualization, communication and verification capabilities.

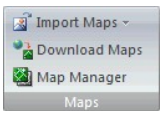
Native raster image formats do not contain internal georeferencing information. However, BREEZE AERMOD/ISC will prompt the user to enter the necessary geospatial information to address the problem. Specifically, the modeler must georeference the image by defining the location and dimensions of the image as it relates the modeling domain.

BREEZE supports the following file types: .bmp, .jpg, .tif.

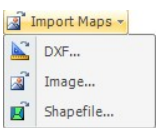
Base maps can also be imported and removed using the Map Manager tool.

To Import a Raster Image

1. From either the Map or 3D Tab, select *Import Maps* from the Maps group



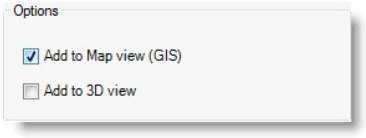
2. Select the *Image...* item.



The BREEZE Import wizard will guide the user through each step of importation.

Step 1: Visualization

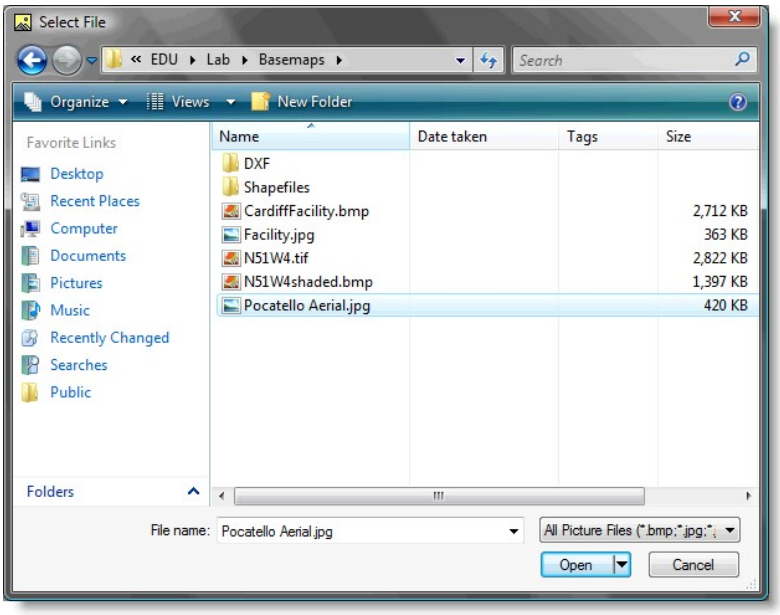
Specify where the imported image should be displayed.



Add to Map view (GIS) : A layer containing the imported image will be added automatically into map view after finished.

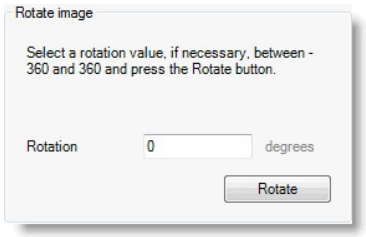
Add to 3D view : A layer containing the imported image will be added automatically into 3D view after finished.

Select the source of the base map. A form will be displayed that will allow you to select the image you wish to import. Very large files should first be reduced in size (to under 5 MB for best performance). A preview off the image will be displayed after the Open button is pressed. Use the scroll bars on the bottom and right side of the preview to view the entire image.



Step 2: Rotation

You can choose to rotate the image and save it as a new image file. Normally, rotation is only done to align the image with true north.



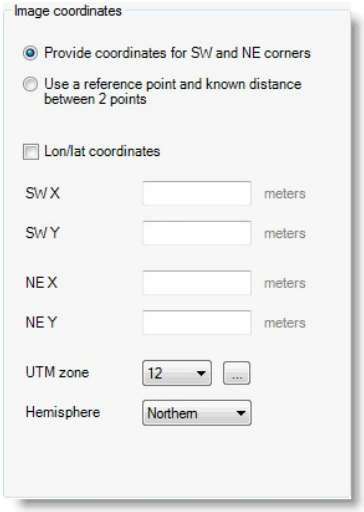
Rotation: The degrees that the image will be rotated.

Rotate: Specify the degrees to rotate and click the *Rotate* button. A Save File dialog box will display and promote the user to save the rotated image in a new file. Specify the file name and path, click Save. A new image file will be generated. In the preview window, the image will appear in a new orientation.

Step 3: Image coordinates

Native raster image formats do not contain internal georeferencing information. When importing an image from an image file, the user must specify a reference point to properly position the image file within the modeling domain. There are two ways to do this:

Method 1:
Provide coordinates for SW and NE corners: Specify the exact coordinates for the southwest and northeast corners of the image.



Lon/lat coordinates: Check this check box, the user will be asked to define the longitude and latitude of the southwest and northeast corners of the image. If this check box is uncheck, the user will be asked to put in coordinates of the southwest and northeast corners of the image.

SW X: Easting (X coordinate) of the southwest corner of the image.

SW Y: Northing (Y coordinate) of the southwest corner of the image.

NE X: Easting (X coordinate) of the Northeast corner of the image.

NE X: Northing (Y coordinate) of the Northeast corner of the image.

SW Lon.: Longitude of the southwest corner of the image in the format of decimal degrees.

SW Lat.: Longitude of the southwest corner of the image in the format of decimal degrees.

NE Lon.: Longitude of the northeast corner of the image in the format of decimal degrees.

NE Lat.: Longitude of the northeast corner of the image in the format of decimal degrees.

UTM zone: The UTM zone in which the image is located. Only necessary if the model object projection is set to UTM.

Hemisphere: The hemisphere where image is located. Only necessary if the model object projection is set to UTM.

NOTE: The image files SW and NE corner coordinates must be based on the same coordinate system used by model objects.

Method 2
Use a reference point and known distance between 2 points: Choose one reference point with known coordinates and give the distance between two chosen points to set the scale of the image map.

Using this method, you can click on a known location on the image, and the Image X and Image Y text boxes will be filled automatically. If the shift values are already known, 0's can be entered for the Image X and Y, and the associated shift values entered for Easting and Northing.

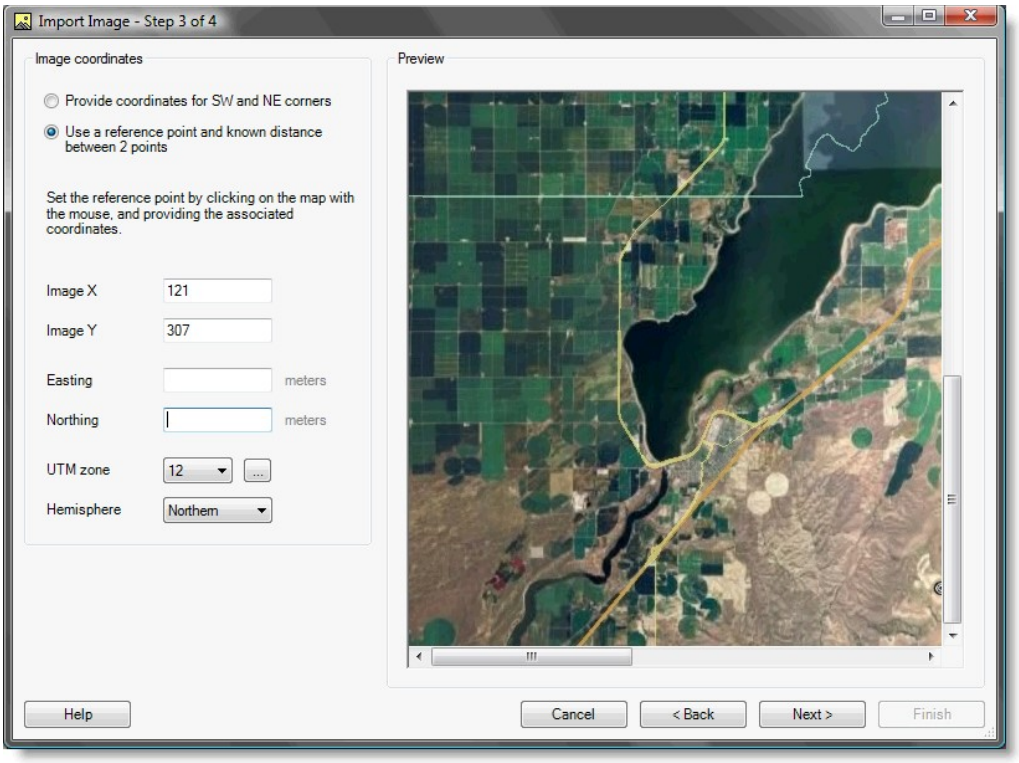


Image X: Image X coordinate of the selected location.

Image Y: Image Y coordinate of the selected location.

Easting: Easting (X coordinate) of the selected location.

Northing: Northing (Y coordinate) of the selected location.

UTM zone: The UTM zone in which the image is located. Only necessary if the model object projection is set to UTM.

Hemisphere: The hemisphere where image is located. Only necessary if the model object projection is set to UTM.

NOTE: The reference point coordinates must be based on the same coordinate system used by model objects.

Step 4: Distance : This step is only required if Method 1 above is selected. The distance scale sets the image size to correspond to the scale of modeling domain within BREEZE. You will need to identify two known points within the image and specify the distance between those points.

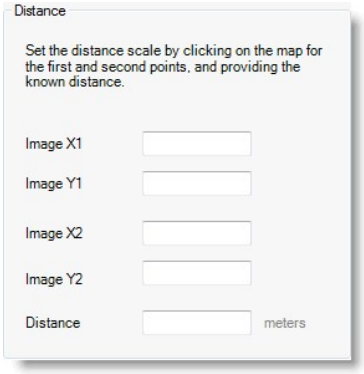


Image X1: The first points' Image X coordinate. Click once on the first known point, this field will be filled automatically.

Image Y1: The first points' Image Y coordinate. Click once on the first known point, this field will be filled automatically.

Image X2: The second points' Image X coordinate. Click a second time on the second known point, this field will be filled automatically.

Image Y2: The second points' Image Y coordinate. Click a second time on the second known point, this field will be filled automatically.

Distance: The distance between the first and the second points.

Step 5: Finish

Press the Finish button and confirm the image was imported to the chosen display windows.

Adjustments to the imported image can be made in the Map Manager tool. The Map Manager will allow you to remove the image from the project scenario.

Import Shapefile

ESRI's .shp format, also known as "shape format" or "shapefiles," can be imported by BREEZE AERMOD. Shapefiles have been openly published by ESRI and are widely used for

data interchange in GIS applications. Shapefiles usually consist of three similarly named files with differing extensions:

Main file: a spatial information file (.SHP),

Index file: an index file (.SHX),

dBase table: a dBASE file with attribute information (.DBF).

An ESRI shapefile consists of a main file, an index file, and a dBASE table. The main file is a direct access, variable-record-length file in which each record describes a shape with a list of its vertices. In the index file, each record contains the offset of the corresponding main file record from the beginning of the main file. The dBASE table contains feature attributes with one record per feature. The one-to-one relationship between geometry and attributes is based on record number. Attribute records in the dBASE file must be in the same order as records in the main file.

When importing a shapefile, only the .shp file is listed in the Open File dialog box. However, the .shx and .dbf files are required to utilize the data. Shapefiles may also include additional files such as .prj or projection information file. BREEZE Software does not currently support use of .prj files.

Serious difficulties can arise when people project drawings in other software and then save the resulting projected data as a shapefile. In such cases, there is no indication that the shapefile contains projected data and cannot be interpreted as a Latitude / Longitude map. Furthermore, there is no information contained within the shapefiles that specifies the projection and parameters used. If these are not provided within some readme.txt file or other accompanying documentation, the shapefiles lose their geographic context.

Since shapefiles cannot save datum information, try to find out what datum was used to save the data to the shape file and select that datum when importing the file. Failing to import a projected drawing from a .shp format correctly will lead to unpredictable effects when the drawing is used as a map. If you import a projected drawing from .shp, you must tell BREEZE AERMOD the correct projection to use to interpret that data since the format does not save this important information.

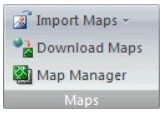
NOTE: In order to successfully open a shapefile, all three components of that shapefile must be present in the same directory (.shp, .shx, and .dbf). Optional files such as .prj may be present, but are not used by BREEZE AERMOD/ISC.

Base maps can also be imported and removed using the Map Manager tool.

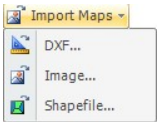
To Import a Shapefile

There are two ways to launch this tool.

1. From either the Map or 3D Tab, select *Import Maps* from the Maps group

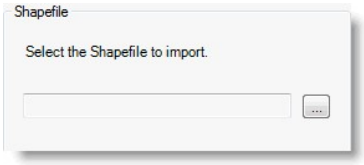


2. Select the *Shapefile...* item.



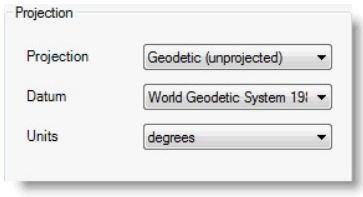
Step 1: Select the shapefile from local disk

Click the button and a file dialog box appears, choose the shapefile that you want to import to the project and click open. The shape file will be displayed in the *Preview* window



Step 2: Projection

Enter the projection and associated parameters of the shapefile being imported.



Step 3: Finish

Press the Finish button and confirm the shapefile was imported to the chosen display windows.

Adjustments to the imported image can be made in the Map Manager tool. The Map Manager will allow you to remove the image from the project scenario.

Download Maps from Web

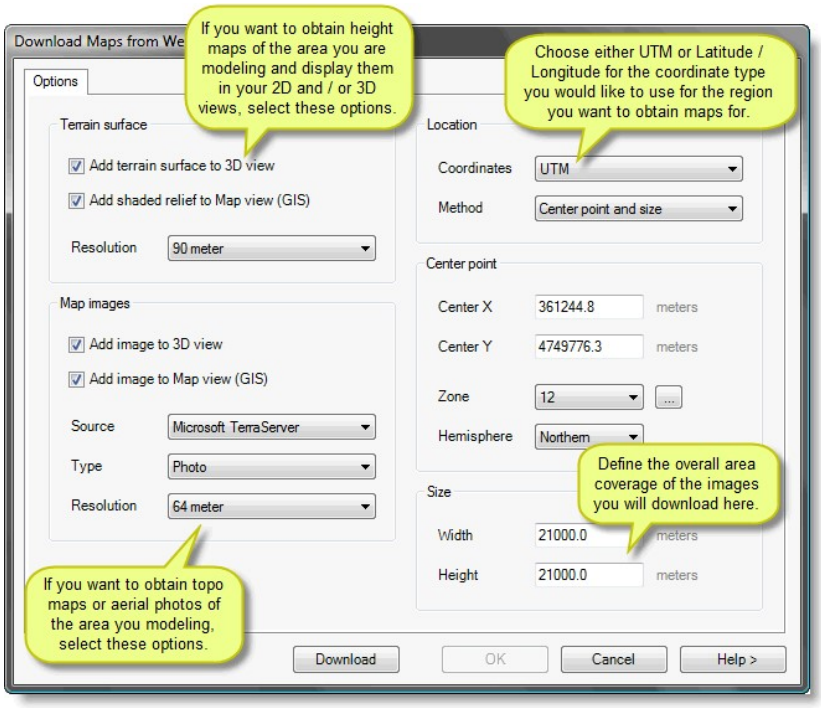
NOTE: The Download Maps from Web function is **only available in the Professional version** of BREEZE AERMOD/ISC. To upgrade your version, contact us.

BREEZE AERMOD allows you to download map images and terrain images from Microsoft TerraServer and add them directly to your projects.

Data from TerraServer is available for location in the United States only.

Options

The Options tab provides methods to automatically import and display base maps.



Terrain surface

This option allows to you download a terrain image and import it to the project.

Add terrain surface to 3D view: Check to add the terrain heightmap image to the 3D view. Select the Tools | 3D World Manager menu item to control the look of the heightmap.

Add terrain surface to Map view (GIS): Check to add the terrain image to the Map view.

Resolution: Terrain surface file's resolution, i.e. the distance that one pixel represents. Lower values show more detail but create larger files.

Map images

This option allows to you download a map image and import it to the project.

Add image to 3D view: Check to add the map image to the 3D view. Select the Tools | 3D World Manager menu item to control the look of the heightmap.

Add image to Map view (GIS): Check to add the map image to the map view.

Source: The Web site to download maps from.

Type: The type of map you want to import. Photo is black and white aerial images; Topo is topographic images; Urban is colored aerial images.

Resolution: Map's resolution, i.e. the distance that one pixel represents.

Location

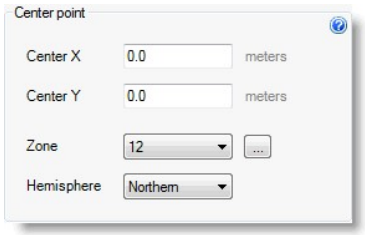
Coordinates: The coordinate system to use in order to define the location that the map covers. You can use either UTM or geographic coordinate (Longitude/Latitude).

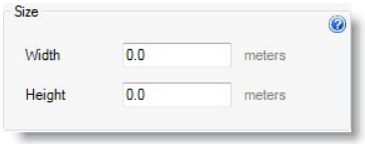
Method: The method to set the size and location of the map.

UTM coordinate system

When the user selects the UTM coordinate system, the geographical location of the map can be defined by implementing the following methods.

Center point and size





Center X: Easting of the center point of the map.

Center Y: Northing of the center point of the map.

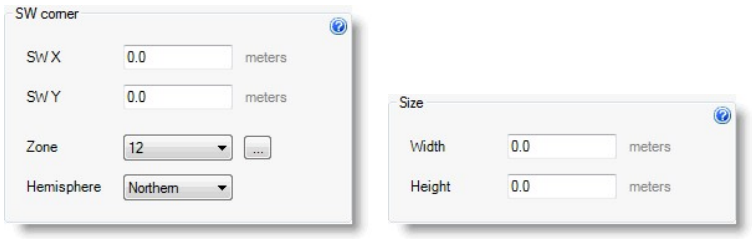
Zone: UTM zone number.

Hemisphere: North or South hemisphere

Width: The distance between the east and west borders of the map.

Height: The distance between the north and south borders of the map.

SW corner and size



SW X: Easting of the southwest corner of the map.

SW Y: Northing of the southwest corner the map.

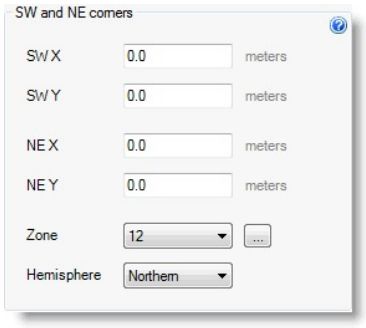
Zone: UTM zone number.

Hemisphere: North or South hemisphere

Width: The distance between the east and west borders of the map.

Height: The distance between the north and south borders of the map.

SW and NE corner



SW X: Easting of the southwest corner of the map.

SW Y: Northing of the southwest corner of the map.

NE X: Easting the northeast corner of map.

NE Y: Northing northeast corner of the map.

Zone: UTM zone number.

Hemisphere: North or South hemisphere.

Longitude/Latitude

When the user selects Longitude/Latitude, the geographical location of the image can be defined by implementing the following methods.

Center point and size

Center Lon. Longitude of the center point of the map, in decimal degrees.

Center Lat.: Latitude of the center point of the map, in decimal degrees.

Width: The distance between the east and west borders of the map.

Height: The distance between the north and south borders of the map.

SW corner and size

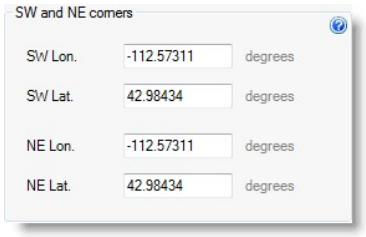
SW Lon. Longitude of the southwest corner of the map, in decimal degrees.

SW Lat.: Latitude of the southwest corner of the map, in decimal degrees.

Width: the distance between the east and west borders of the area.

Height: the distance between the north and south borders of the area.

SW and NE corner



SW Lon. Longitude of the southwest corner of the map, in decimal degrees.

SW Lat.: Latitude of the southwest corner of the map, in decimal degrees.

NE Lon. Longitude of the northeast corner of the map, in decimal degrees.

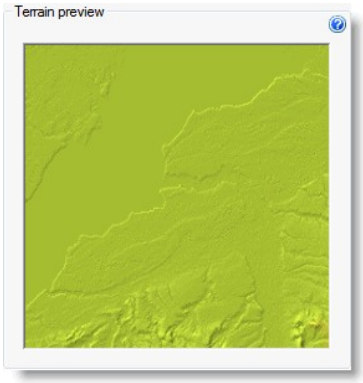
NE Lat.: Latitude of the northeast corner of the map, in decimal degrees.

Preview Images

The Preview tab presents a preview of the images that were downloaded from the Web.

Terrain preview

The Terrain preview displays a preview of a height map that is created if the *Terrain surface* option was selected.



Map preview

The Map preview displays a preview of a TerraServer map that is created if the *Map images* option was selected.

Map Manager

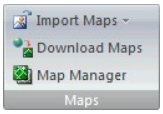
The BREEZE Map Manager allows you to create and manage the appearance of different base map layers associated with a project scenario in the Map display window. It is often helpful to display an image of the modeling domain within the BREEZE interface. This not only provides a frame of reference but also can help with the quality control of model object placement.

The following are the types of base maps that can be imported to BREEZE AERMOD/ISC. In addition to using the Map Manager to associate base maps with a project scenario, the Import Maps wizard is available in the Maps group. This tool often makes it easier to import the base maps. See the discussion below comparing the Map Manager and the Import Wizards.

- AutoCAD files (.dxf). Note, .dwg files must first be converted to .dxf if you wish to import them.
- Raster images (e.g., aerial photos, .bmp, .jpg, .tiff)
- Shapefiles (i.e., ESRI ArcGIS, .shp)

Starting the Map Manager

1. Select the Map tab
2. Select the *Map Manager* item within the Maps group.



Map Manager vs. Import Wizards

An alternative method to the Map Manger for importing base maps is to use the three base map importation wizards provided under the Tools menu item. The differences between these methods are as follows.

Importing AutoCAD DXF Files

Using the DXF importation wizard, the user can only define the geographic location of the file domain by its UTM coordinates. Using the Map Manager, the user can choose one from dozens of coordinate systems to define the geographic of the file domain.

Importing Raster Image Files

From the Image Importation wizard, the user can choose to add the image to either 2D view or 3D view or both. From Map Manager, the user can add the image only to 2D view.

From the image importation wizard, the user can only define the geographic location of the image by its UTM coordinates. From Map Manager, the user can choose one from dozens of coordinate systems to define the geographic location of the image.

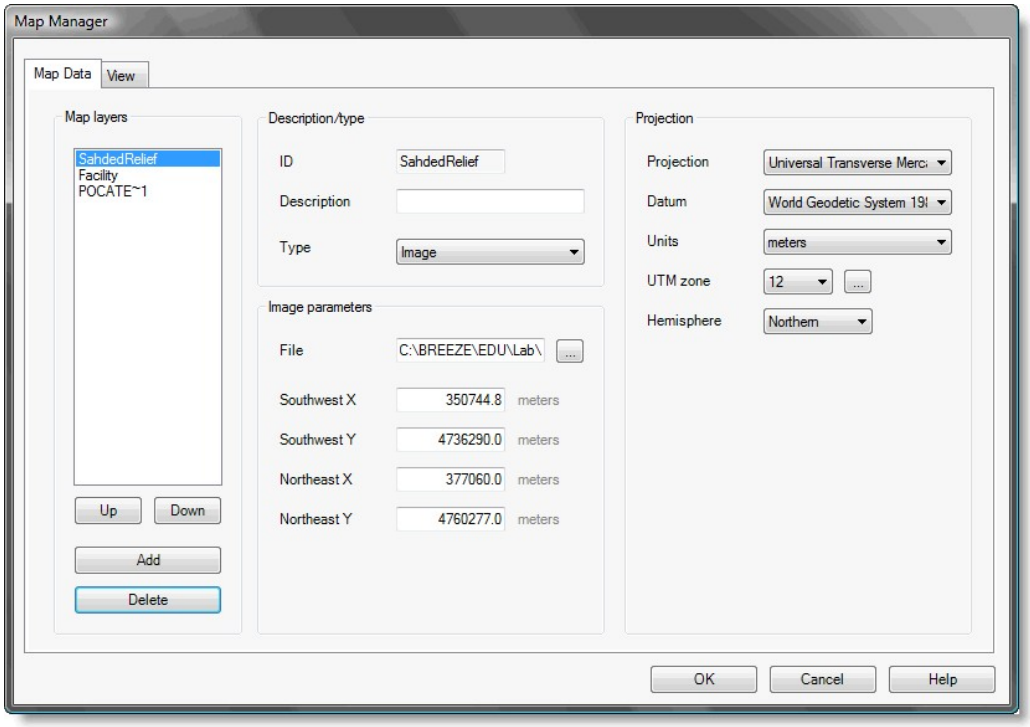
From the image importation wizard, the user can position the image by providing coordinates of the image's southwest and northeast corners, or by providing coordinates of one reference point on the image, and the distance between two points. From Map Manager, the user can dozens of coordinate systems to define the geographic location of the image.

Importing MapInfo Tab Files

There is no MapInfo Tab importation wizard at this time.

Map Data

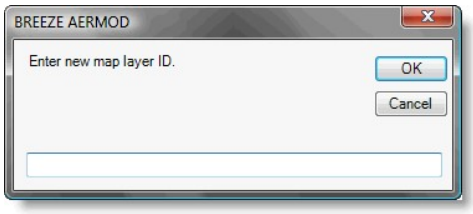
The Map Data tab allows you to add, delete, and arrange base maps and set attributes for them.



Map layers

The *Map layers* group box controls the sequencing of the imported base maps in the Map display window. It also allows you to add or remove map layers.

Add: Click this button to add a new base map. You will be asked to provide a Map Layer ID. This name will displayed in the Map display window along with a check box that allows you to toggle on and off the display of this particular layer.



Delete: Click this button to remove a base map from the project scenario. The removed base map will be the selected base map.

Up: Moves the selected layer up one layer. Map layers appearing at the top of the list appear on top of lower layers in the Map display window.

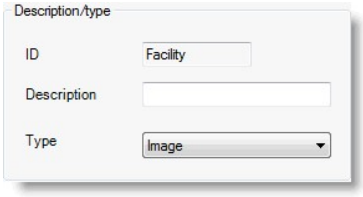
Down: Moves the selected layer down one layer. See "Up" for more information.

Description/Type

In the *Description/Type* group box, select the base map type. There are three types of base maps that can be imported:

1. Image
2. ESRI Shapefile
3. MapInfo Tab
4. DXF.

The base map attribute parameters displayed in the parameters group box are type dependent. That is, the parameters will change as the base map type is changed. You can add an optionalto the base map layer into the Description text box.



ID: Map layer alphanumeric ID. This is provided when the map is added to the project scenario and can not be changed. The ID is displayed in the Display map window alongside a checkbox. Romoving the check from the checkbox will prevent the image from being displayed. Adding the check back will display the image.

Description: You can provide an optional description of the map layer.

Type: Defines the type of the map layer. Select one. If the specified type is not the correct type of the base map, the base map will not import or display correctly.

Projection

The *Projection* group box lets the user define the projection of the base map. The GIS integrated into BREEZE will adjust the display of the base map and align it correctly with the projection defined for the Map display window.

The projection parameters displayed depend on the type of projection selected. For more information on the projection parameters, see the section on Projections.

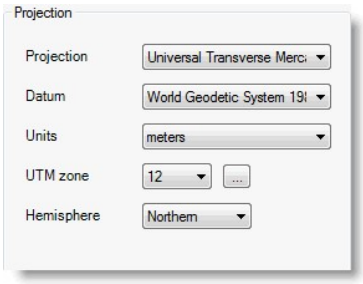
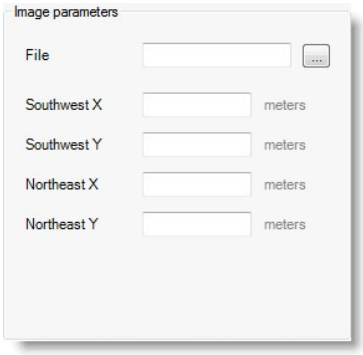


Image Parameters

Displayed when the Image type is selected in the Description/type group box.



Note: an alternative way of importing an image is through the use of the Image import tool.

File: Identifies the base map file. Click the button to display a form that allows you to choose the base map. Select the image file you wish to import and click Open. The file name and its path will be displayed.

Southwest X: X coordinate of the southwest corner of the image.

Southwest Y: Y coordinate of the southwest corner of the image.

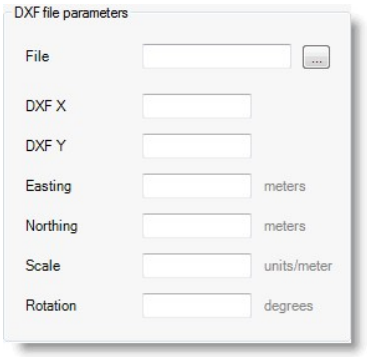
Northeast X: X coordinate of the Northeast corner of the image.

Northeast Y: Y coordinate of the Northeast corner of the image.

DXF file Parameters

Displayed when the AutoCAD DXF type is selected in the Description/type group box.

When importing a DXF file, you must identify a location (a single point) within the base map's coordinate system and determine what that location is in a UTM coordinate system. This will be used to coorectly position the base map within the Map display window.



File: Identifies the base map file. Click the button to display a form that allows you to choose the base map. Select the image file you wish to import and click Open. The file name and its path will be displayed.

DXF X: X coordinate of a known location within the DXF base map.

DXF Y: Y coordinate of a known location within the DXF base map.

Easting: The UTM easting coordinate for the known DXF X coordinate.

Northing: The UTM northing coordinate for the known DXF Y coordinate.

Scale: Enter the scale that's used for the DXF map. That is, how many DXF map units are equal to one meter.

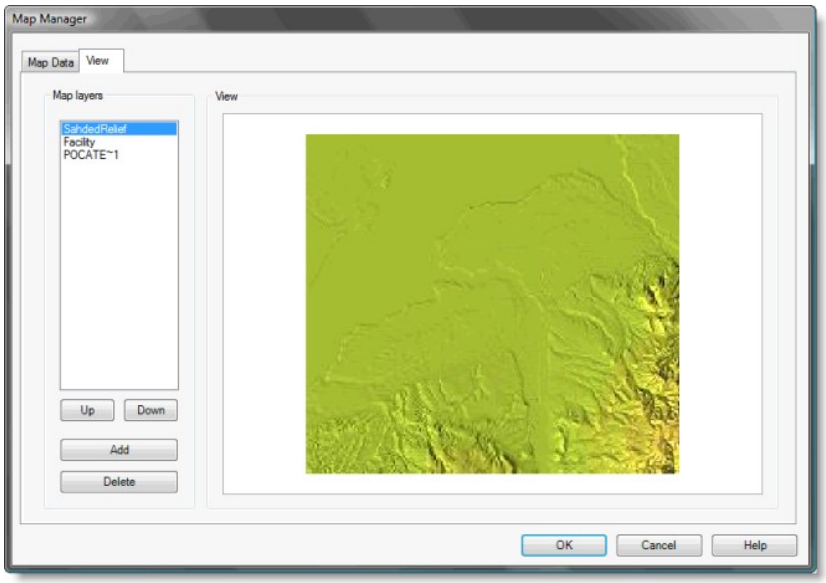
Rotation: Enter the desired rotation angle, if any. A positive number will rotate the map clockwise, from north (0 degrees), a negative number, counterclockwise.

Shapefile Parameters / Tab file Parameters

For ESRI Shape files and MapInfo Tab files, only the name of the file is required.

View

The View tab provides a preview of the basemap that is imported. Select the base map layer ID to display it. You can zoom in and out by clicking and dragging the left mouse button in the view display. Dragging to the lower right will zoom in, while dragging to the upper left will zoom out.

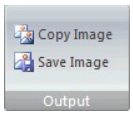


Redraw

The Redraw group sets if the Map display view will be refreshed automatically or manually. By default, the group is set to Automatic redrawing. Whenever a new object or base map is added to the project, the Map display view will automatically refresh to show the new object/image. If the user unchecks the box, any new objects added to the project will not display until the user selects the Refresh option from this group.

Unselecting the Automatic option will save computer resources when there are a large number of objects displayed in the Map view.

Output



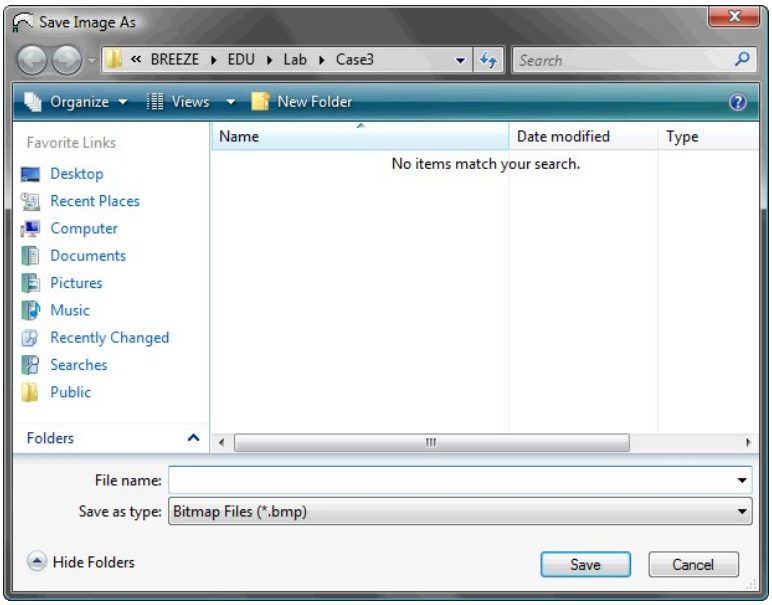
The Output group allows the user to save the image currently displayed in the Map display view. There are two options available:

Copy Image

This option copies the currently displayed image so the user can paste it in another application (e.g. Microsoft Word, Paint).

Save Image

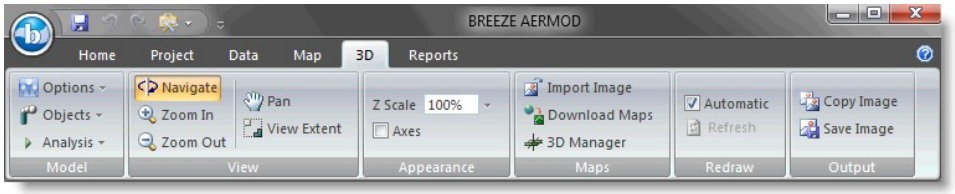
This option opens the Save Image As... dialog box. The image can be saved in any standard format (Bitmap, JPEG, Gif)



3D

NOTE: The 3D tab and display view are **only available in the Professional version** of BREEZE AERMOD/ISC. To upgrade your version, contact us.

The 3D tab contains options for working in the three-dimensional display view. This includes options viewing, applying base maps, and modifying the display view appearance settings.



Groups on the 3D Ribbon Bar

Model: Contains menus with options from the Project Ribbon Bar

View: Contains navigation tools for maneuvering the 3D display window

Appearance: Handles how the 3D display view appears in the main window

Maps: Tools for adding and controlling base maps in the 3D view

Redraw: Handles whether the 3D display view refreshes automatically or manually; works the same as the Redraw group in the Map display

Output: Functions for copying or saving the currently displayed 3D view; works the same as the Output group in the Map display

The 3D menu contains the basic options associated with the 3D Window. All of the options have corresponding buttons on the 3D Toolbar, and Reset View has a keyboard shortcut assigned to it.

Item	Description
Navigate	Use the mouse left, right, and wheel to navigate the 3D Window. Click on 3D View and hold the mouse button down while moving mouse. • Left mouse button - Tilt and rotate • Right mouse button - Zoom in / out • Wheel - Zoom in / out
Zoom In	Click the left mouse button while hovering over the 3D

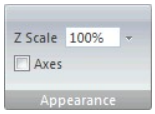
	View to incrementally zoom in. The mouse's wheel can also be used to zoom in.
Zoom Out	Click the left mouse button while hovering over the 3D View to incrementally zoom out. The mouse's wheel can also be used to zoom out.
Pan	Click and hold the left mouse button to "grab" the 3D View. Drag the cursor to reposition the center of the 3D View.
View Extent	Resets the 3D View to display all model objects contained in the model scenario.
Decrease Z Scale	Reduces the terrain exaggeration.
Increase Z Scale	Increases the terrain exaggeration.
Axes	Toggles On/Off the axes display
Use Controller	Toggles On/Off optional controller control of 3D View navigation. If no controller is attached, control is transferred to the mouse.

View

Tools for navigating the 3D display view are included in this group.

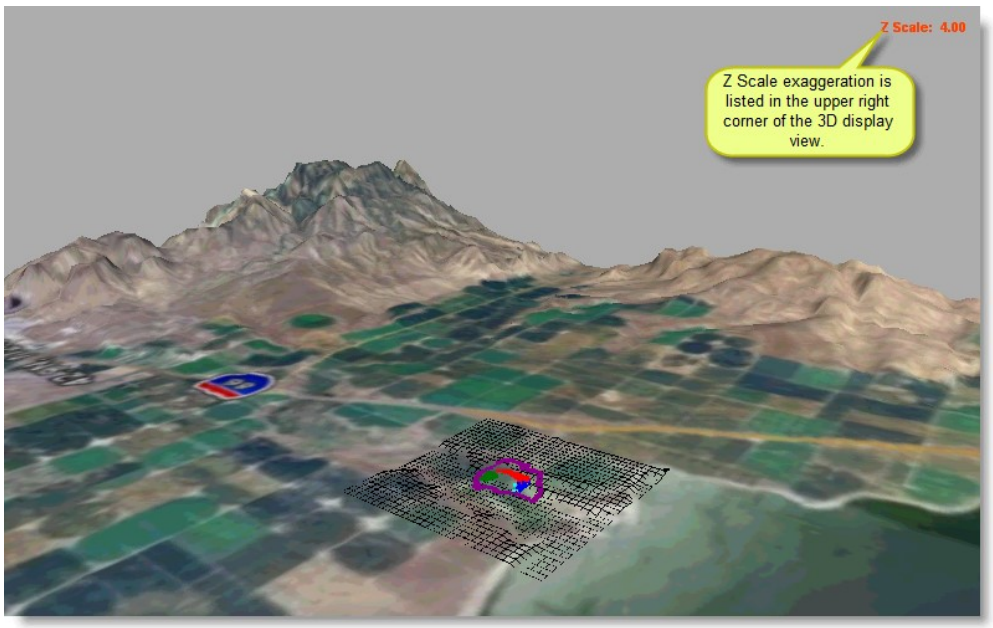
Item	Description
Navigate	Use the mouse left, right, and wheel to navigate the 3D Window. Click on 3D View and hold the mouse button down while moving mouse. • Left mouse button - Tilt and rotate • Right mouse button - Zoom in / out • Wheel - Zoom in / out
Zoom In	Click the left mouse button while hovering over the 3D View to incrementally zoom in. The mouse's wheel can also be used to zoom in.
Zoom Out	Click the left mouse button while hovering over the 3D View to incrementally zoom out. The mouse's wheel can also be used to zoom out.
Pan	Click and hold the left mouse button to "grab" the 3D View. Drag the cursor to reposition the center of the 3D View.
View Extent	Resets the 3D View to display all model objects contained in the model scenario.

Appearance



The Appearance group controls two options:

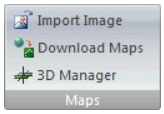
1. **Z Scale**: This option increases or decreases terrain exaggeration in the 3D display view. Changing the scale will multiply the elevations by the specified percentage.



Example of increased Z Scale (exaggerated terrain)

2. **Axes**: This option toggles on the X & Y axes in the 3D display view. These can be displayed to help users stay oriented to where the original southwest corner of their model objects was.

Maps



The Maps group has tools for importing and controlling basemaps in the three-dimensional Map view.

Menus in the Maps Group

Import Image: Wizard for importing base maps to the 3D view.

Download Maps: Tool for downloading terrain and map images from Microsoft Terraserver.

3D Manager: Tool for creating and managing the appearance of base maps imported to the Map view.

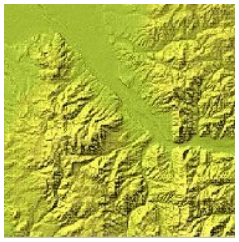
3D Manager

NOTE: The 3D Manager is **only available in the Professional version** of BREEZE AERMOD/ISC. To upgrade your version, contact us.

BREEZE AERMOD/ISC can display model objects, height maps, and image base maps in the 3D view. Different type of objects and images are organized in separate layers. 3D Manager allows you to create and manage different layers associated with images.

Height Maps

Height maps used by BREEZE are raster images that store terrain elevation data. Height maps can be created using the BREEZE Tool to download maps from the website.

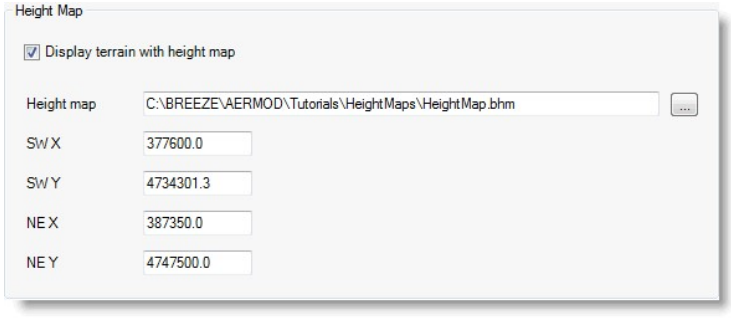


Example of a height map

Height maps can be added to the 3D display window three ways:

1. Using the *Download Maps from Web* form. Select the option to *Add terrain surface to 3D view*. This option connects to the BREEZE terrain data server to produce the height map.
2. While importing terrain elevations. Select the option to *Add terrain surface to 3D view*. This option will create a height map from the digital elevation model(s) (DEM) that are processed when terrain is imported.
3. Through the use of the the 3D Manager.

One height map can be associated with each project scenario. The coordinates of the height map's corners are required to properly georeference the image within the 3D display window.



Display terrain with height map: Check this box to display a height map in the 3D display window.

Height map: Specify the name of the height map file. Use the button to the right of the field to select the file.

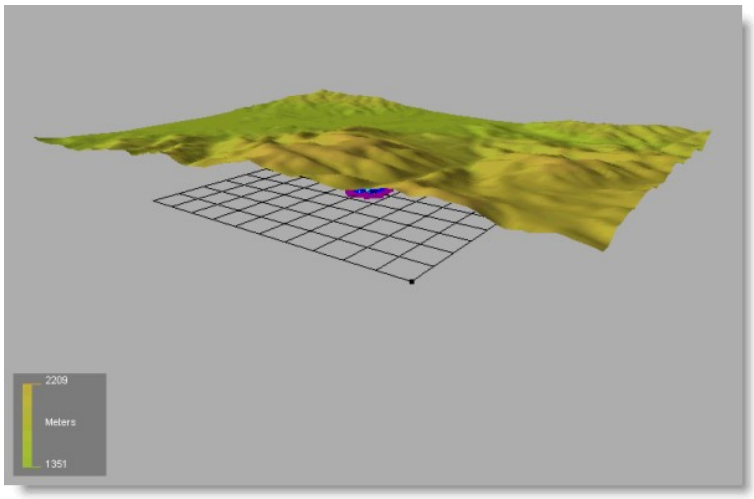
SW X: Easting coordinate of the height map's Southwest corner.

SW Y: Northing coordinate of the height map's Southwest corner.

NE X: Easting coordinate of the height map's Northeast corner.

NE Y: Northing coordinate of the height map's Northeast corner.

The following is an example of a height map displayed in the 3D window. This height map was obtained using the Download Maps from Web tool. Note that the height map seems to be floating above the receptor grid. This is because terrain elevations were not yet specified for the model objects (using AERMAP).

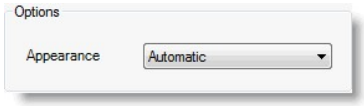


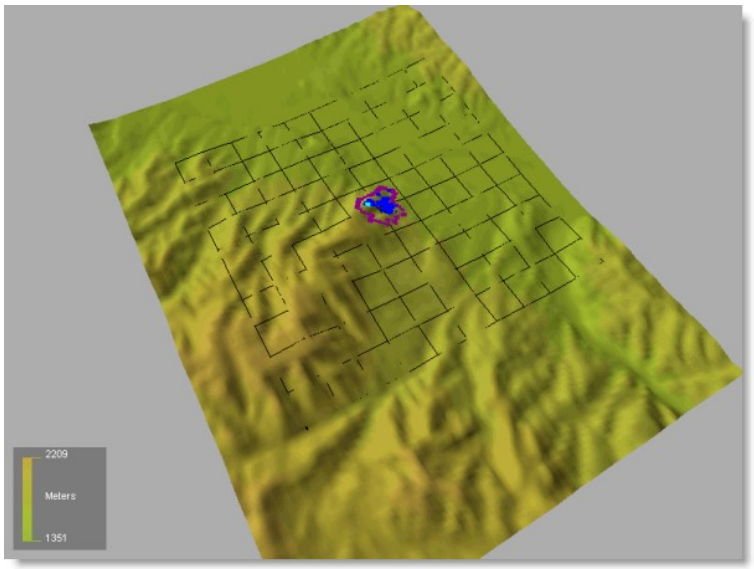
Surface

There are three appearance options that determine how the height maps will be displayed in the 3D display window.

Automatic

This is the most commonly used option since it requires no effort by the user to define how the height map is displayed.

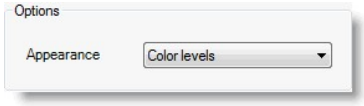




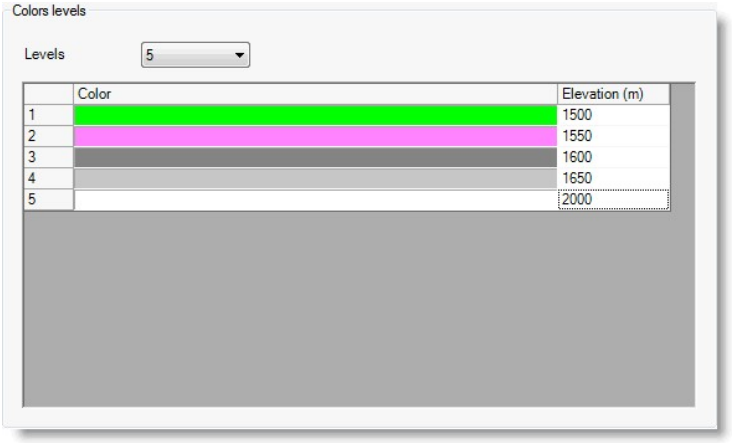
Height map rendered using the Automatic option

Color levels

This option allows the user to define the colors used for different elevations.



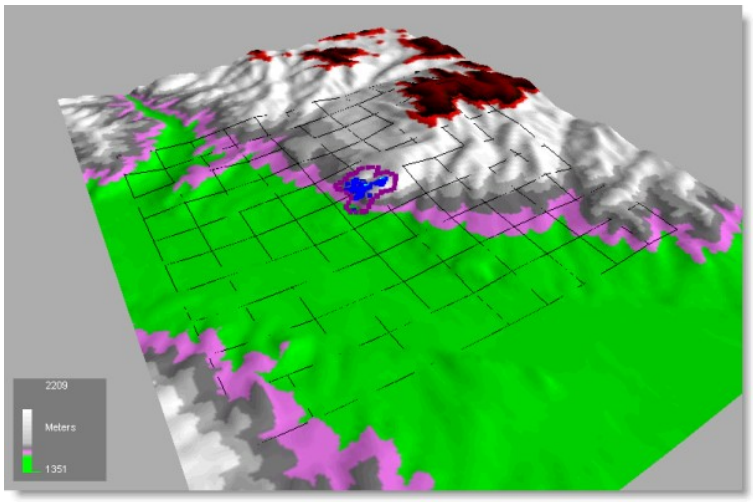
When this option is selected, the user can specify the number of elevation levels to define colors for.



Levels: Choose the number of terrain elevation levels. You will be asked to define each level's height and color.

Color: Click each color level. A color palate will be displayed where you can choose a color.

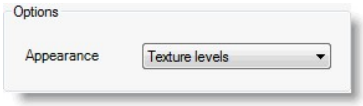
Elevation(m): Define the lower bound of elevation for each level.



Height map rendered using the Color levels option

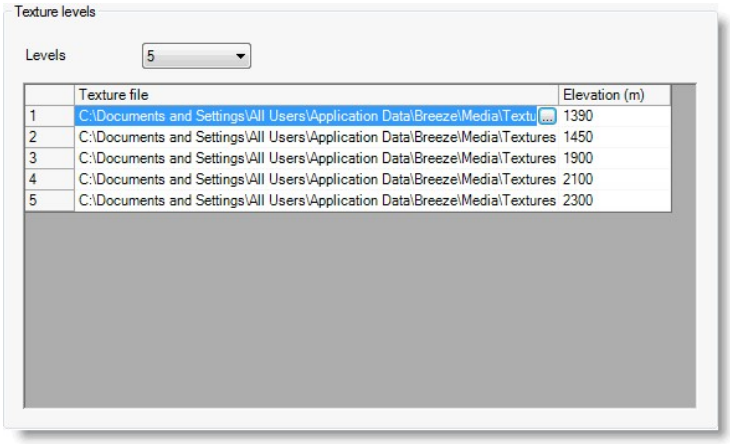
Texture levels

Textures can also be used to define the look of terrain elevations. A texture file is an image file that stores a pattern style.



BREEZE comes with some basic textures. They are located in the C:\Documents and Settings\All Users\Application Data\Breeze\Media\Textures directory.

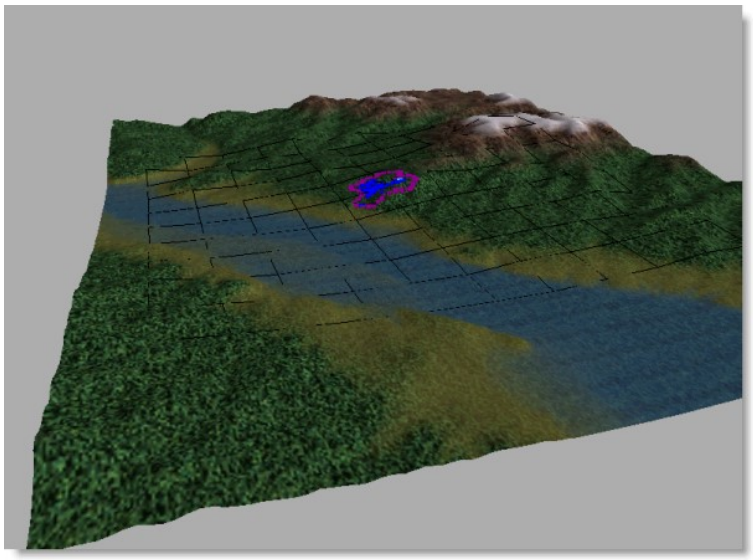
Texture files included with BREEZE


Texture levels
Levels
5
Texture file
Elevation (m)
1 C:\Documents and Settings\All Users\Application Data\Breeze\Media\Textu 1390
2 C:\Documents and Settings\All Users\Application Data\Breeze\Media\Textures 1450
3 C:\Documents and Settings\All Users\Application Data\Breeze\Media\Textures 1900
4 C:\Documents and Settings\All Users\Application Data\Breeze\Media\Textures 2100
5 C:\Documents and Settings\All Users\Application Data\Breeze\Media\Textures 2300

Levels: Choose the number of terrain elevation levels you wish to define. You will be asked to define each level's height and texture file.

Texture file: Click on each row, a small button will appear at the right end of the row. Click the button to open up a file dialog box and choose a texture file.

Elevation(m): Define the lower bound of elevation for each level.



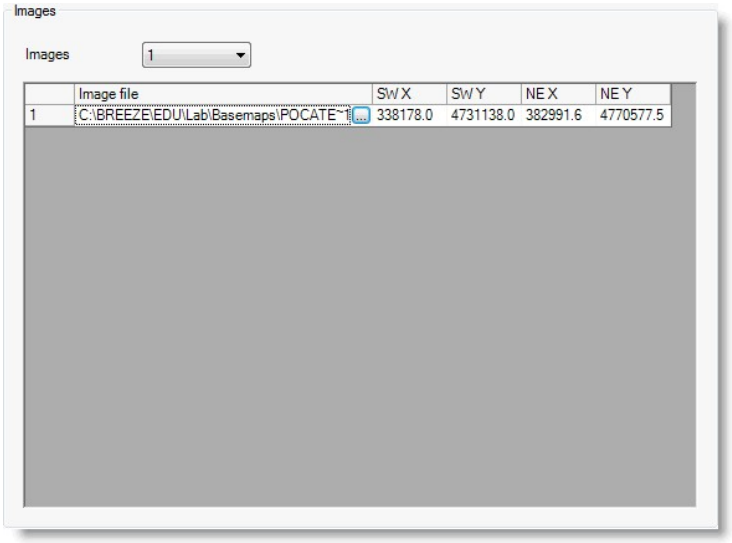
Height map rendered using the Texture levels option

Images

Images can be added to the 3D display window two ways:

1. Using the *Download Maps from Web* form. Select the option to *Add image to 3D view*. This option connects to TerraServer to produce the height map.
2. Through the use of the the 3D World Manager.

More than one image can be associated with a model scenario.



Images: Specify the number of image files you want to display in the 3D window. The corresponding number of rows will be displayed.

Image file: Name and path of the image file. Left mouse click the white space, a button will appear. Click the button to select the image file to be imported.

SW X: Easting of the images Southwest corner.

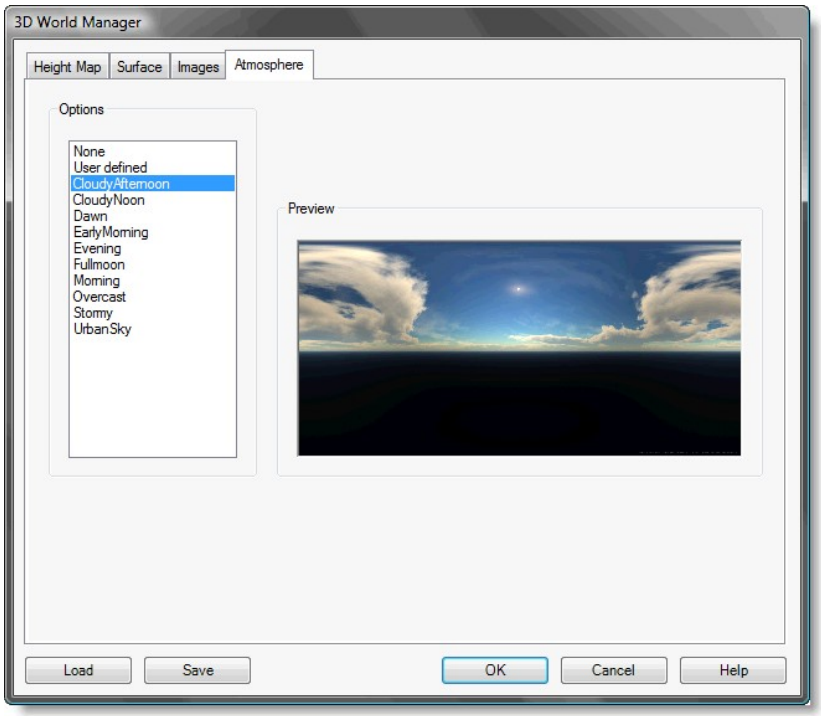
SW Y: Northing of the images Southwest corner.

NE X: Easting of the images Northeast corner.

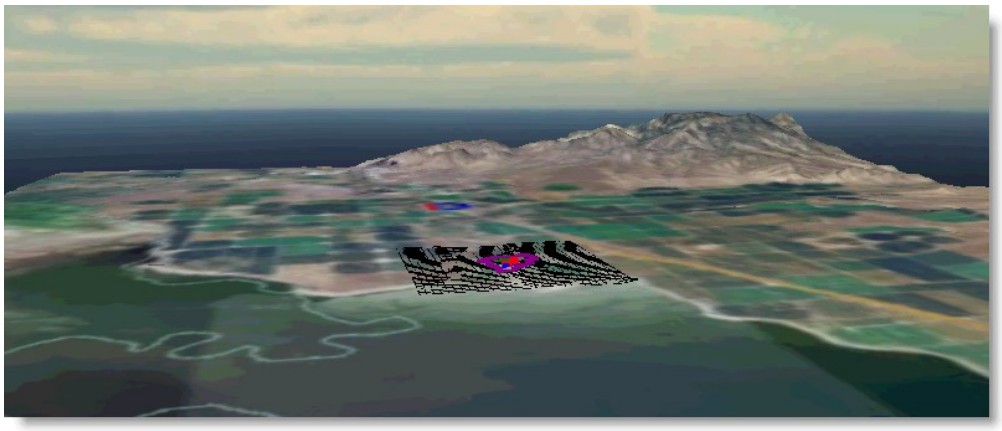
NE Y: Northing of the images Northeast corner.

Atmosphere

Visual effects can often enhance the 3D display. "Atmosphere's" are raster images that are displayed in the 3D view in such a way that they appear along the horizon.

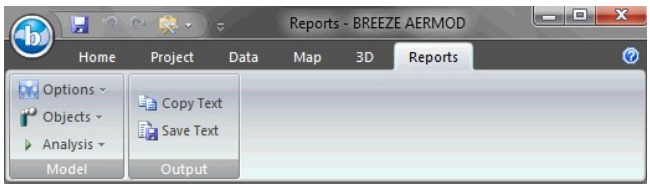


The following is an example of the "CloudyAfternoon" atmosphere.



Reports

The Map tab contains options for working in the two-dimensional Map display view. This includes options for viewing, drawing to, selecting objects in, and applying base maps.



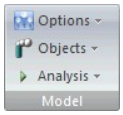
Groups on the Reports Ribbon Bar

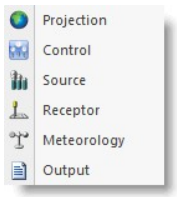
Model: Contains menus with options from the Project Ribbon Bar

Output: Functions for copying the text of an open report in the Reports display view or saving the open report out to a .txt file.

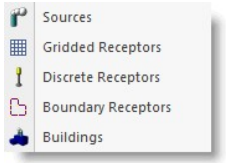
Model Group

The Model group is present on the Data, Map, 3D, and Reports tabs. Each menu represents one of the groups from the Project Ribbon Bar. These provide quick access to the various project options while working within other tabs.

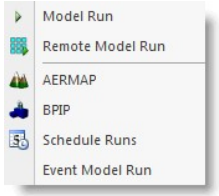




Options Menu



Objects Menu

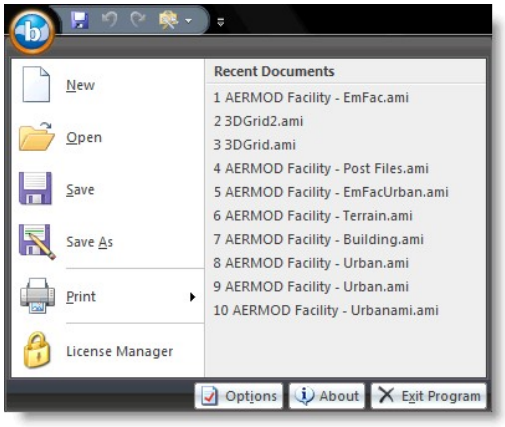


Analysis Menu

BREEZE Application Menu and Quick Access Toolbar

In the top left hand corner of the program is the application button. This is the main menu which contains basic project functions (e.g. Open, Save, Print), the License Manager, a list of recent projects opened, and general program options. Next to the Application button is the Quick Access Toolbar.

Application button

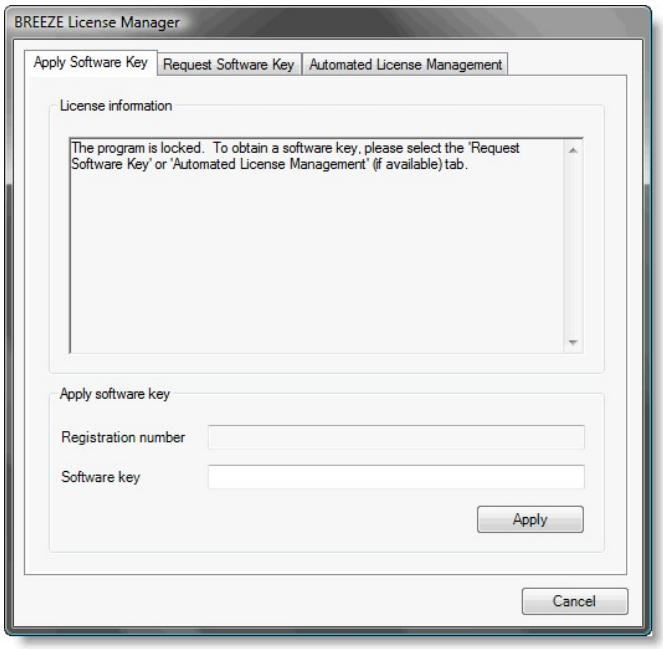


Application menu

License Manager

The License Manager in BREEZE AERMOD/ISC controls the version of the program that the user has access to. It allows users to enter a software key (either manually or through Automated License Management) to unlock their version of BREEZE AERMOD/ISC.

To unlock the software, refer to Obtaining Your Software Key in the BREEZE Quick Start Guide.


BREEZE License Manager
Apply Software Key
Request Software Key
Automated License Management
License information
The program is locked. To obtain a software key, please select the 'Request Software Key' or 'Automated License Management' (if available) tab.
Apply software key
Registration number
Software key
Apply
Cancel

BREEZE License Manager

BREEZE_Options

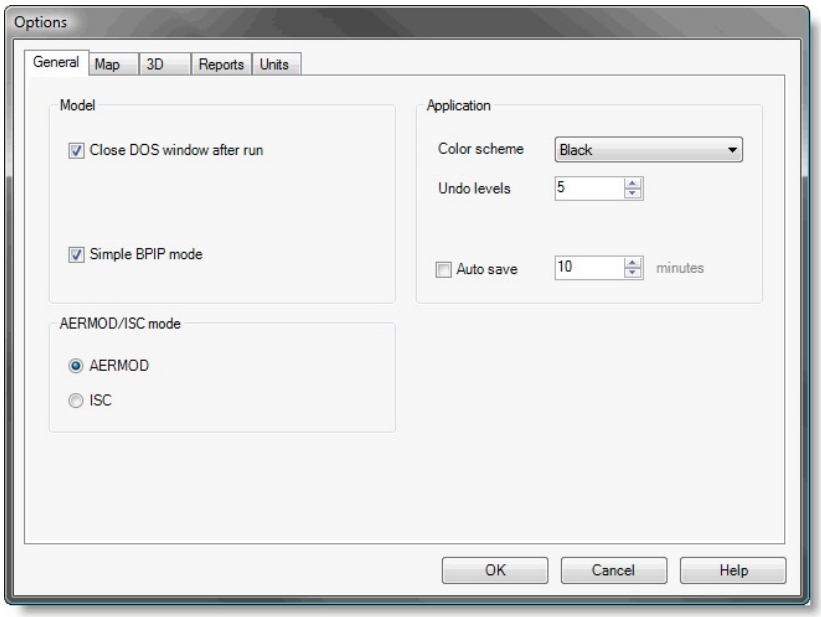
BREEZE has many customizable options that allow each modeler configure the system to his or her own likeness. Many of the "sticky" preferences or options that help define the look, feel, and operation of AERMOD/ISC are defined in the Options form accessible from the Tools menu.

This form was formally known as the Preferences form in previous versions of BREEZE.

Displaying the Options Form

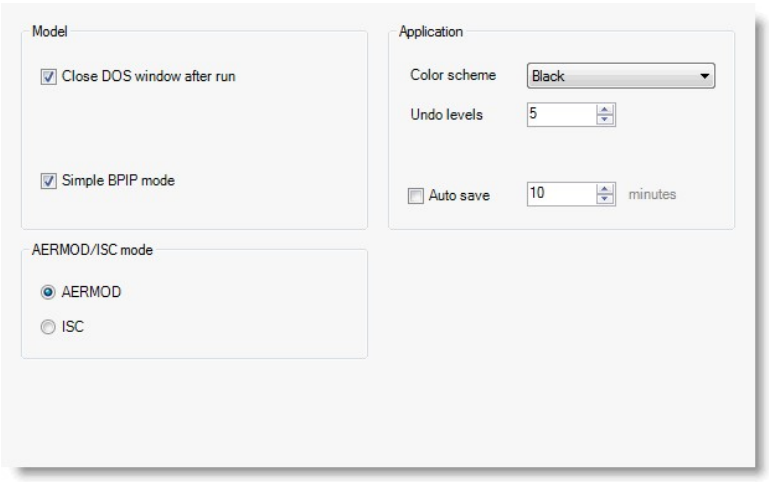
1. Choose Options from the Application menu. The Options dialog is opened.

2. Click on the desired tab on the form that appears.



General Tab

The General tab, as the name implies, allows the user to set preferences specific to general BREEZE functionality.



Model

Close DOS window after run: Check this box to close the DOS window after Fortran executions of AERMOD, AERMAP, BPIP complete. Not checking this option will allow you to review any messages written to the DOS window after the Fortran programs complete. To close the DOS window, press the Enter key.

Simple BPIP mode – By checking this box BREEZE will simplify the process of entering building information for use in the Building Profile Input Program (BPIP). In the simple mode, the user is not required to enter a building and/or tier number. These values are automatically set by BREEZE.

Application

Color scheme: Changes the color scheme of the ribbon bar and display view title bars. Choices are black, blue, and silver.

Enable undo: Set the number of undo/redo levels that you would like BREEZE to support. If this box is not checked, the undo feature is disabled.

Automatic save: Check this box to have BREEZE automatically save your project at the specified time interval.

AERMOD/ISC mode

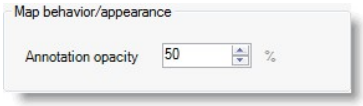
Select the radio button to switch from AERMOD to ISC. Changes made to the mode setting will take effect the subsequent time the program is opened.

Map Tab

The Map tab controls how model objects and other features in the 2D Map view appear.

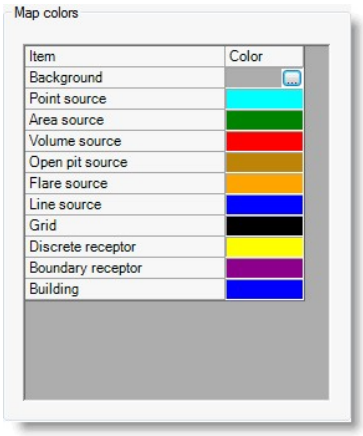
Map behavior/appearance

The Map tab controls preferences in the 2D Map View.



Automatic redraw: If this box is checked, the map will automatically update as changes are made to the data. If this box is unchecked, the map window will not update automatically. To update the view when this option is selected, the window must be closed and reopened.

Map colors

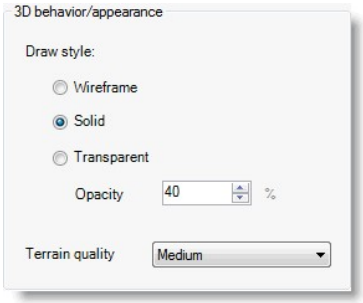


Map colors: Model object colors displayed in the 2D Map View (e.g., sources, buildings, receptors) can controlled by the color palette on this form.

3D Tab

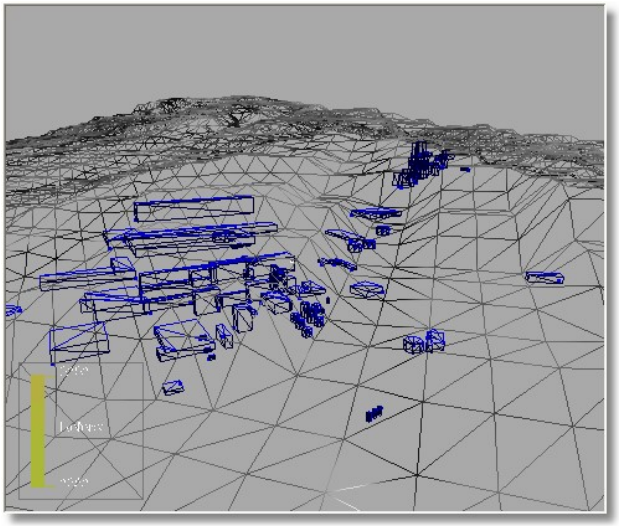
The 3D tab controls how model objects and other features in the 3D view appear.

3D behavior/appearance

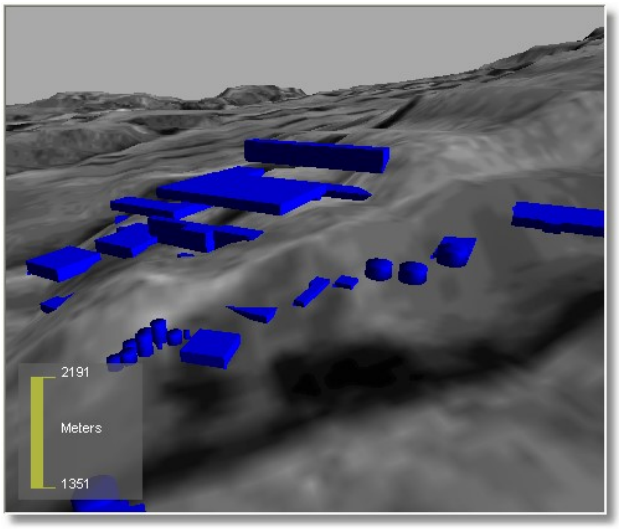


Automatic redraw: If this box is checked, the map will automatically update as changes are made to the data. If this box is unchecked, the map window will not update automatically. To update the view when this option is selected, the window must be closed and reopened.

Draw style: These options define how model objects will appear in the 3D view.



Wireframe - The least memory intensive option. Wireframe objects are displayed as simple objects outlined by a colored line.



Solid - Modeling objects are opaque. Objects beneath or behind a solid object cannot be seen through the object.

Transparent – Modeling objects are rendered so that other modeling objects can be seen beneath and behind the object.

Opacity - Controls the level of transparency. The higher the number, the greater the level of transparency.

Terrain quality: Controls the quality of the terrain display. A selection of High requires the most amount of computer memory but will show terrain

Reports Tab

The Reports tab controls how the report attributes.

Appearance

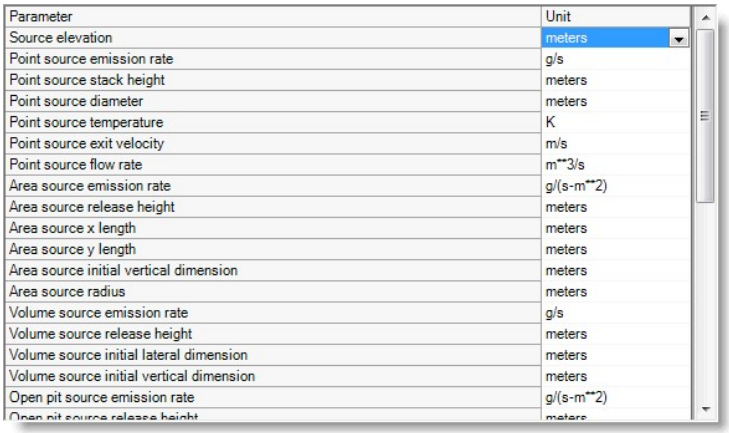
Font: Select this button to choose the font you would like to use for the reports.

Units Tab

The Units tab controls the default units used through out the BREEZE interface. In AERMOD/ISC, most units are converted to metric units when processed by the Fortran program.

Units

Select the Unit parameter in the second column to change the desired unit of measure for the parameter displayed in the first column of the selected row.

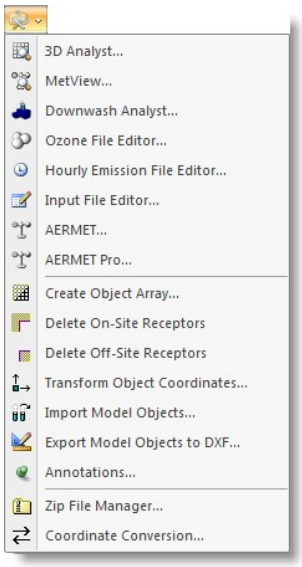


Parameter	Unit
Source elevation	meters
Point source emission rate	g/s
Point source stack height	meters
Point source diameter	meters
Point source temperature	K
Point source exit velocity	m/s
Point source flow rate	m**3/s
Area source emission rate	g/(s-m**2)
Area source release height	meters
Area source x length	meters
Area source y length	meters
Area source initial vertical dimension	meters
Area source radius	meters
Volume source emission rate	g/s
Volume source release height	meters
Volume source initial lateral dimension	meters
Volume source initial vertical dimension	meters
Open pit source emission rate	g/(s-m**2)
Open pit source release height	meters

Quick Access Toolbar

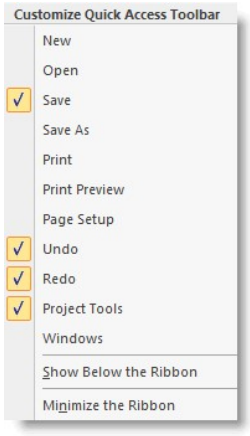
The Quick Access Toolbar allows users to quickly select certain options. By default, the toolbar contains four options: Save, Undo, Redo, and Project Tools.

Default Quick Access Toolbar



Project Tools Menu

Selecting the arrow at the end of the Quick Access Toolbar will open up a menu of additional options the user may choose to have present on the toolbar. This menu also allows users to select where the Quick Access Toolbar is displayed (above or below the Ribbon Bar) and minimize the Ribbon Bar.



Custom Options for QAT

Data Display Views

Data display views are opened by selecting the tab from the Ribbon Bar.

Depending on the interface style chosen, BREEZE AERMOD/ISC can display data in up to six simultaneous windows. Each data display view is capable of displaying data independently of the other windows.

Project View

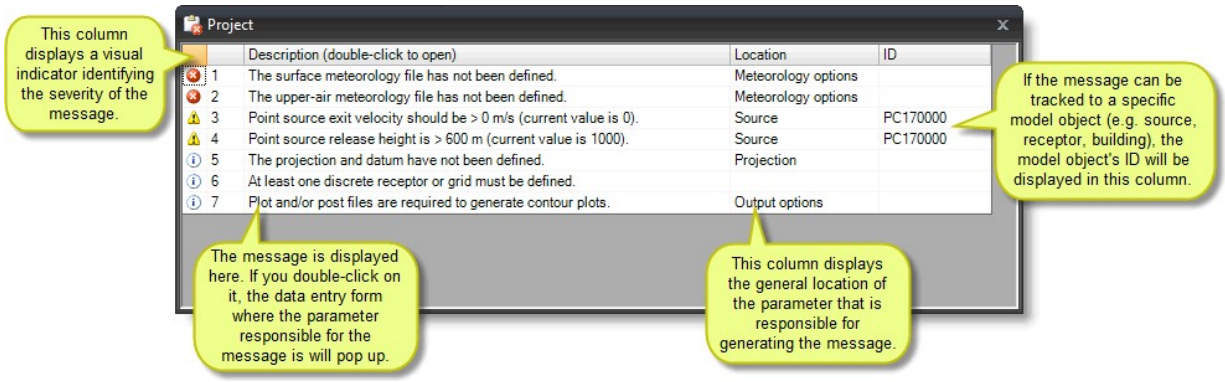
The Project display view conveniently displays a list of potential Warnings and Errors. This helps to identify problematic areas within the opened model scenario that might prevent it from being run correctly.

There are three message types:

Icon	Message Type	Description
	Informational	Informational messages provide useful information to the user regarding modeling options or missing data that the modeler may want to review before making a model run. Messages of this type are typically informational only and do not indicate that a modeling error will occur when running the Fortran executable. The model scenario will still complete successfully even in the presence of these messages.
		Warning messages alert the user to potential erroneous or missing data. Messages of this type do not indicate

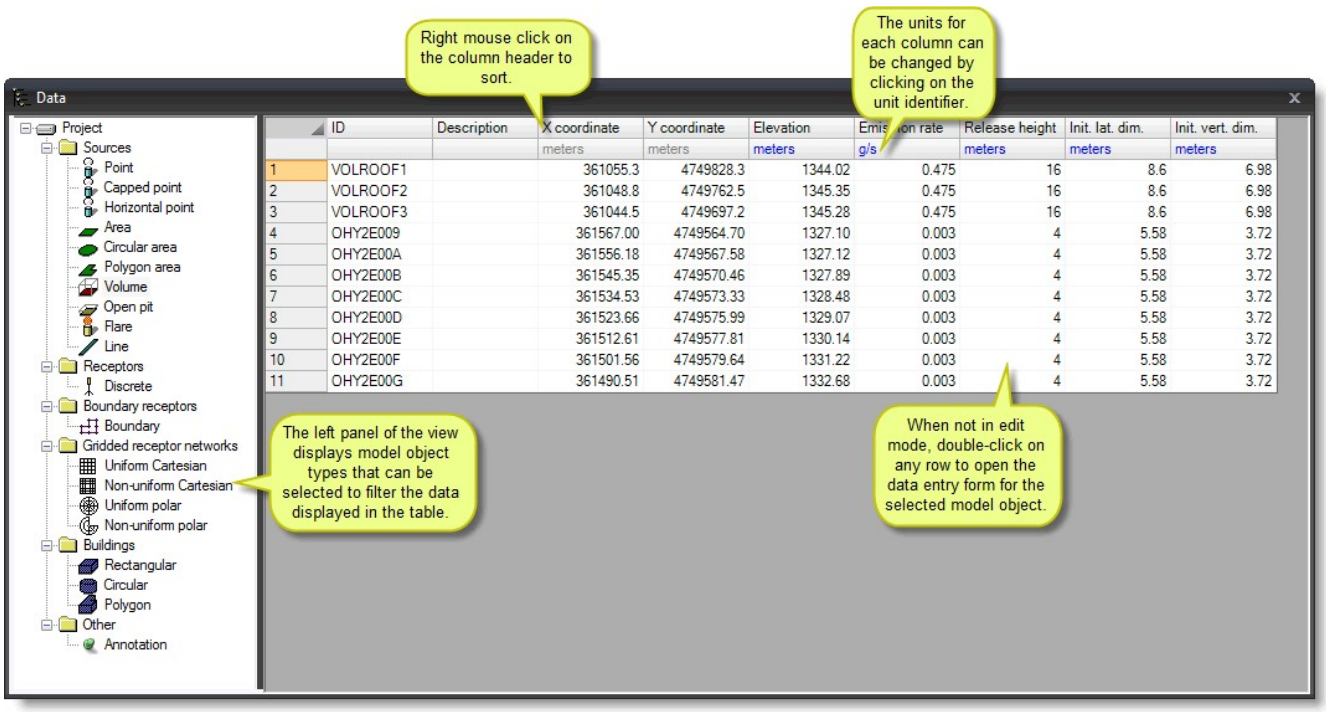
	Warning	that a modeling error will occur, however, users should review warning messages carefully since they may cause incorrect results or unintended consequences based on user defined modeling options. Messages of this type are often caused by missing or internal data flags to identify if certain values are outside "typical" or accepted numeric ranges. Common examples include exit velocities greater than 50 m/s.
	Error	Error messages indicate that a modeling error will occur. Messages of this type must be addressed by the user prior to a successful run. These messages are often attributable to missing or incorrect data in the input file, such as meteorological data files not present.

BREEZE automatically updates informational, warning, and error messages as data is entered into forms or model options defined.


This column displays a visual indicator identifying the severity of the message.
Project
Description (double-click to open)
Location
ID
1 The surface meteorology file has not been defined. Meteorology options
2 The upper-air meteorology file has not been defined. Meteorology options
3 Point source exit velocity should be > 0 m/s (current value is 0). Source PC170000
4 Point source release height is > 600 m (current value is 1000). Source PC170000
5 The projection and datum have not been defined. Projection
6 At least one discrete receptor or grid must be defined.
7 Plot and/or post files are required to generate contour plots. Output options
If the message can be tracked to a specific model object (e.g. source, receptor, building), the model object's ID will be displayed in this column.
The message is displayed here. If you double-click on it, the data entry form where the parameter responsible for the message is will pop up.
This column displays the general location of the parameter that is responsible for generating the message.

Data Explorer View

The Data Explorer window provides a means of viewing project data in a Windows Explorer-like fashion. It is also referred to as the Spreadsheet or Table view because model object data can be viewed, added, removed, and edited from within this view much like today's standard spreadsheet applications.

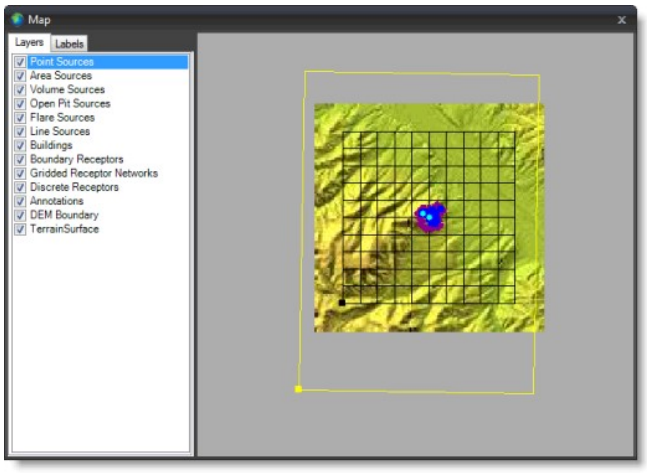

Right mouse click on the column header to sort.
The units for each column can be changed by clicking on the unit identifier.
Data
Project
Sources
Point
Capped point
Horizontal point
Area
Circular area
Polygon area
Volume
Open pit
Flare
Line
Receptors
Discrete
Boundary receptors
Boundary
Gridded receptor networks
Uniform Cartesian
Non-uniform Cartesian
Uniform polar
Non-uniform polar
Buildings
Rectangular
Circular
Polygon
Other
Annotation
ID | Description | X coordinate | Y coordinate | Elevation | Emission rate | Release height | Init. lat. dim. | Init. vert. dim.
meters | meters | meters | g/s | meters | meters | meters
1 VOLROOF1 361055.3 4749828.3 1344.02 0.475 16 8.6 6.98
2 VOLROOF2 361048.8 4749762.5 1345.35 0.475 16 8.6 6.98
3 VOLROOF3 361044.5 4749697.2 1345.28 0.475 16 8.6 6.98
4 OHY2E009 361567.00 4749564.70 1327.10 0.003 4 5.58 3.72
5 OHY2E00A 361556.18 4749567.58 1327.12 0.003 4 5.58 3.72
6 OHY2E00B 361545.35 4749570.46 1327.89 0.003 4 5.58 3.72
7 OHY2E00C 361534.53 4749573.33 1328.48 0.003 4 5.58 3.72
8 OHY2E00D 361523.66 4749575.99 1329.07 0.003 4 5.58 3.72
9 OHY2E00E 361512.61 4749577.81 1330.14 0.003 4 5.58 3.72
10 OHY2E00F 361501.56 4749579.64 1331.22 0.003 4 5.58 3.72
11 OHY2E00G 361490.51 4749581.47 1332.68 0.003 4 5.58 3.72
The left panel of the view displays model object types that can be selected to filter the data displayed in the table.
When not in edit mode, double-click on any row to open the data entry form for the selected model object.

The data within this view cannot be edited without first putting enabling the edit mode. This is done by selecting the Edit Object tool button on the Data Ribbon Bar

.

Map View

The Map Window is a true Geographic Information System (GIS) that displays model objects and maps in a user specified projection and datum. Display multiple geographically referenced map layers, with linear and polygonal features imported from a variety of data file formats.



Example of Map display view

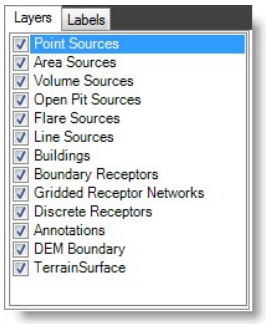
Selecting Layers

The left panel of the Map view displays check boxes that control the display of data layers and labels within the Map view.

Layers tab

The layer control on the left side of the Map view gives the user complete control over the display of the various layers included in a project.

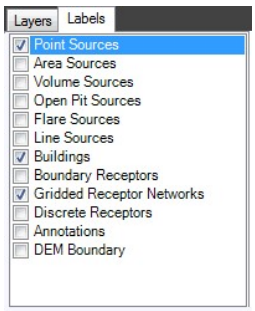
This includes modeling objects and base maps. To make a layer visible, simply check the box next to the description of that layer. Uncheck the box to hide a layer.



Labels tab

The Labels tab provides a means of controlling the display of labels for each layer.

For example, checking the Point Sources check box will display the ID for each point source model object.



Coordinate Toolbar

The coordinate toolbar is displayed on the Ribbon Bar when the Map tab is selected. It identifies the location of the mouse cursor when it is hovered over the Map display view.

Coordinate ToolBar

Navigation

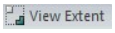
Zooming In/Out

To zoom in or out on a region, select the Zoom In Zoom In or Zoom Out Zoom Out button in the View group. Next, click on the area of the map window to zoom in or out on. To zoom into a specific area, click and drag from the upper left to the lower right, the cursor over the area you want to zoom in on.

Panning

To pan the view, select the Pan button in the View group. Click, hold, and drag your left mouse button in the direction you wish to move the center of your map view.

Viewing Extents

To view the extent (zoom out or in) of all current model objects, select the View Extent  button. Use the View Extent All button to view all model objects and images and DEM boundaries.

Printing

Copying the Window

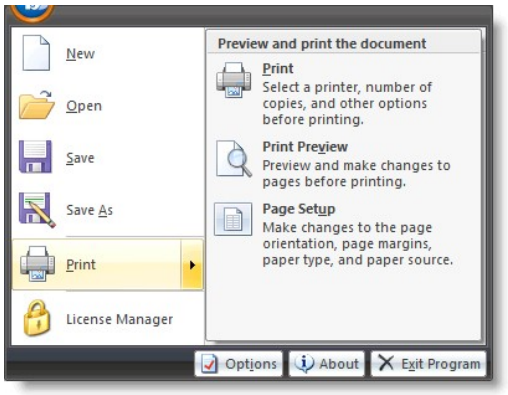
Functions for copying or saving an image in the Map display view are found in the Output group.

Print Preview

Select the Print Preview option from the Application menu.

Print

Select the Print option from the Application menu to print the display view.

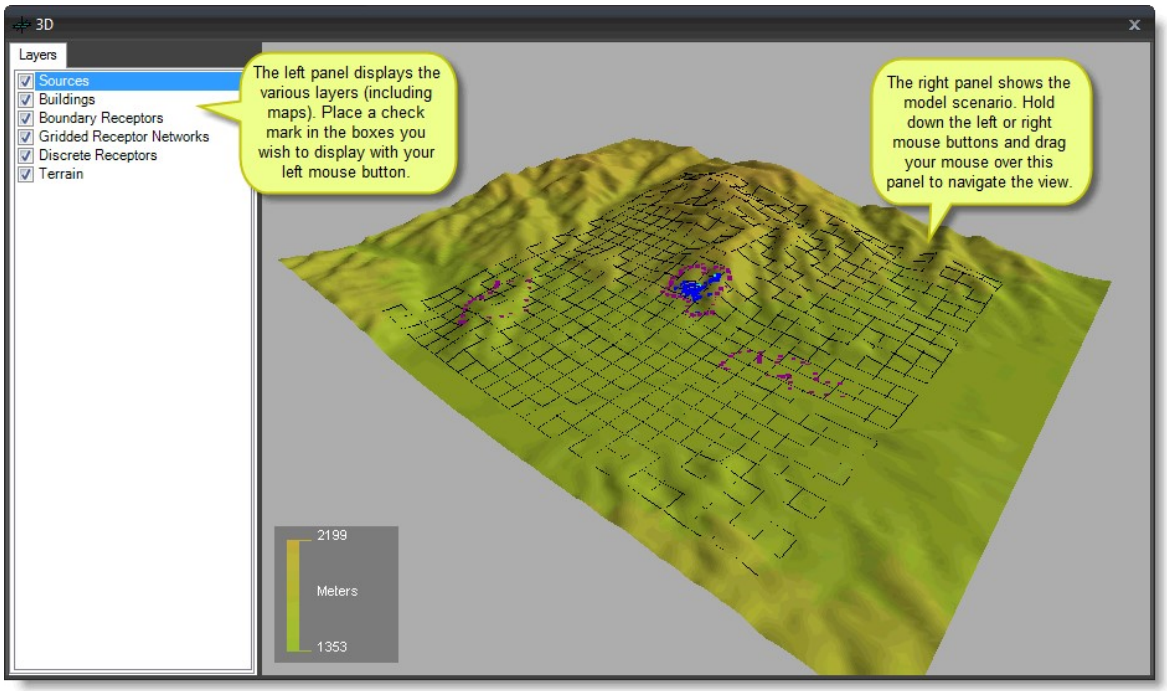


Print Functions from the Application Menu

3D View

NOTE: The 3D display view is **only available in the Professional version** of BREEZE AERMOD/ISC. To upgrade your version, contact us.

The 3D display view shows all model objects and base maps in a three-dimensional view. The options in the View group of the 3D Ribbon Bar are available to adjust the altitude, azimuth, and distance of the view. Select the 3D tab open the 3D display view.


3D
Layers
Sources
Buildings
Boundary Receptors
Gridded Receptor Networks
Discrete Receptors
Terrain
The left panel displays the various layers (including maps). Place a check mark in the boxes you wish to display with your left mouse button.
The right panel shows the model scenario. Hold down the left or right mouse buttons and drag your mouse over this panel to navigate the view.
2199
Meters
1353

Navigation

Navigating in the 3D view is best performed using the mouse. The Navigate tool button must be selected to use this method.

Left mouse button: Click and hold down the left mouse button. Move the mouse to tilt and rotate the display

Right mouse button: Click and hold down the right mouse button. Move the mouse to zoom in and out.

Mouse wheel: If you mouse is equipped with a wheel, you can use it to zoom in and out.

The Zoom In tool button can be used to zoom in on the display view by clicking the left mouse button on the display window.

The Zoom Out tool button can be used to zoom out on the display view by clicking the left mouse button on the display window.

The Pan tool button can be used to move the center of the display view. Click and hold down the left mouse button on the display view while moving the mouse in the direction you wish to shift the display center.

Printing

Copying the Window

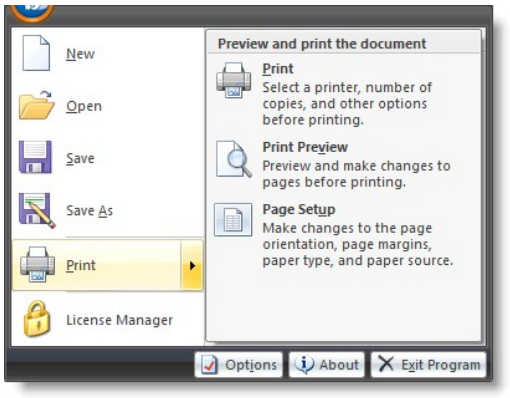
Functions for copying or saving an image in the 3D display view are found in the Output group.

Print Preview

Select the Print Preview option from the Application menu.

Print

Select the Print option from the Application menu to print the display view.



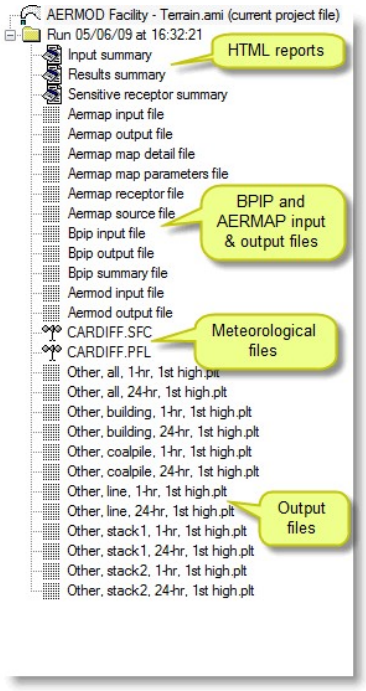
Print Functions from the Application Menu

Reports View

The Reports display view provides a quick and easy means of viewing the various files associated with a project. This includes the input (or project) file, output (or list file), BPIP associated files, run log information, and any associated error files.

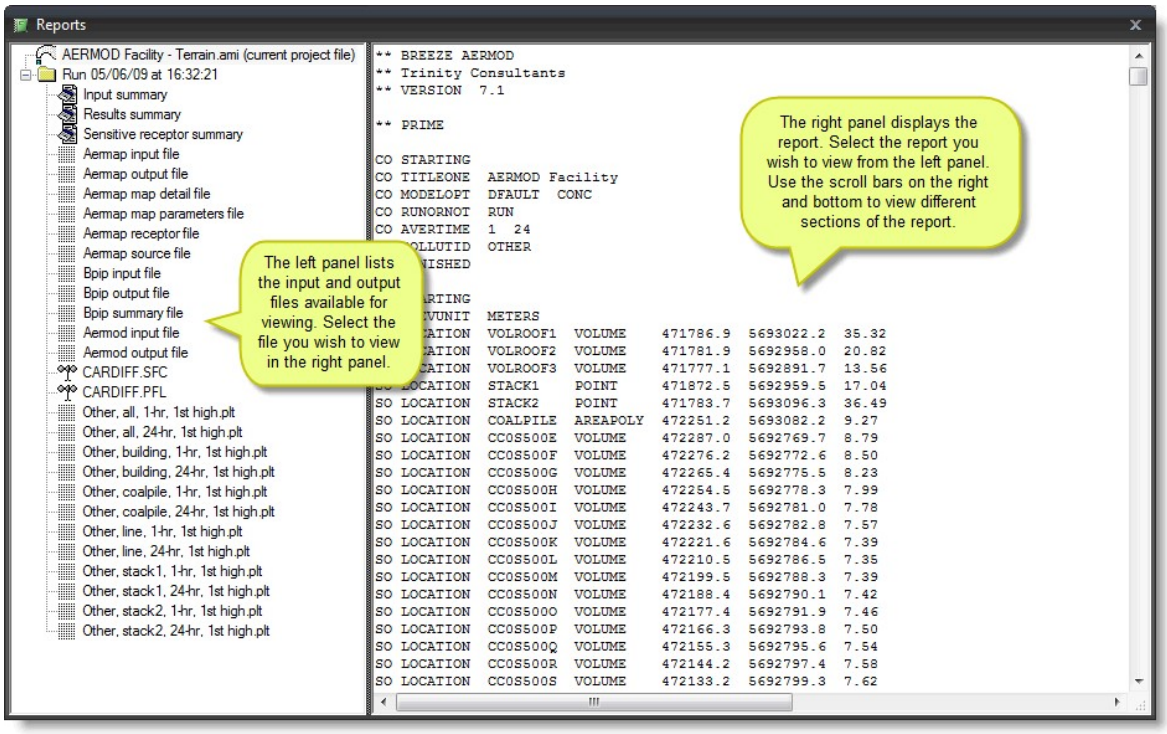
To view a particular file, simply select that file from the list shown on the left side of the Reports view.

Each of these files are stored in the new compressed .amz file and can be easily extracted for use with text editors such as Notepad.



To work with or open a particular file, extract the file from the .amz file which is created once you save a model scenario or make a model run. You can use either the Zip File Manager in BREEZE AERMOD/ISC or an external program (like WinZip or Microsoft's file compression program) to open and extract the files.

The .amz file is located in the same directory you saved your model scenario input file (.ami).


Reports
AERMOD Facility - Terrain.ami (current project file)
Run 05/06/09 at 16:32:21
Input summary
Results summary
Sensitive receptor summary
Aermap input file
Aermap output file
Aermap map detail file
Aermap map parameters file
Aermap receptor file
Aermap source file
Bpip input file
Bpip output file
Bpip summary file
Aermod input file
Aermod output file
CARDIFF.SFC
CARDIFF.PFL
Other, all, 1-hr, 1st high.plt
Other, all, 24-hr, 1st high.plt
Other, building, 1-hr, 1st high.plt
Other, building, 24-hr, 1st high.plt
Other, coalpile, 1-hr, 1st high.plt
Other, coalpile, 24-hr, 1st high.plt
Other, line, 1-hr, 1st high.plt
Other, line, 24-hr, 1st high.plt
Other, stack1, 1-hr, 1st high.plt
Other, stack1, 24-hr, 1st high.plt
Other, stack2, 1-hr, 1st high.plt
Other, stack2, 24-hr, 1st high.plt
** BREEZE AERMOD
** Trinity Consultants
** VERSION 7.1
** PRIME
CO STARTING
CO TITLEONE AERMOD Facility
CO MODELOPT DFAULT CONC
CO RUNORNOT RUN
CO AVERTIME 1 24
METERS
SO LOCATION VOLROOF1 VOLUME 471786.9 5693022.2 35.32
SO LOCATION VOLROOF2 VOLUME 471781.9 5692958.0 20.82
SO LOCATION VOLROOF3 VOLUME 471777.1 5692891.7 13.56
SO LOCATION STACK1 POINT 471872.5 5692959.5 17.04
SO LOCATION STACK2 POINT 471783.7 5693096.3 36.49
SO LOCATION COALPILE AREAPOLY 472251.2 5693082.2 9.27
SO LOCATION CC0S500E VOLUME 472287.0 5692769.7 8.79
SO LOCATION CC0S500F VOLUME 472276.2 5692772.6 8.50
SO LOCATION CC0S500G VOLUME 472265.4 5692775.5 8.23
SO LOCATION CC0S500H VOLUME 472254.5 5692778.3 7.99
SO LOCATION CC0S500I VOLUME 472243.7 5692781.0 7.78
SO LOCATION CC0S500J VOLUME 472232.6 5692782.8 7.57
SO LOCATION CC0S500K VOLUME 472221.6 5692784.6 7.39
SO LOCATION CC0S500L VOLUME 472210.5 5692786.5 7.35
SO LOCATION CC0S500M VOLUME 472199.5 5692788.3 7.39
SO LOCATION CC0S500N VOLUME 472188.4 5692790.1 7.42
SO LOCATION CC0S500O VOLUME 472177.4 5692791.9 7.46
SO LOCATION CC0S500P VOLUME 472166.3 5692793.8 7.50
SO LOCATION CC0S500Q VOLUME 472155.3 5692795.6 7.54
SO LOCATION CC0S500R VOLUME 472144.2 5692797.4 7.58
SO LOCATION CC0S500S VOLUME 472133.2 5692799.3 7.62
The left panel lists the input and output files available for viewing. Select the file you wish to view in the right panel.
The right panel displays the report. Select the report you wish to view from the left panel. Use the scroll bars on the right and bottom to view different sections of the report.

There are two types of reports: Text and HTML. The above report is an example of a Text report. The below is an example of an HTML report.

BREEZE Staff can customize reports for you. All we need to know is what you would like to view in the report. If you provide a Word or .PDF document that shows us the layout of your desired report, we can provide you a template that will generate the reports you need each time you make a model run. There are no limits to the number of these reports that can be processed by BREEZE.

BREEZE AERMOD Model Results

Highest Results of Pollutant: OTHER

Avg. Per.	Grp ID	High	Type	Val	Units	Date	UTM		Elev.	Hill Ht.	Flag Ht.	Rec. Type	Grid ID
						YYMMDDHH	East (m)	North (m)	(m)	(m)	(m)		
1-HR	ALL	1ST	Avg. Conc.	1053.16504	ug/m**3	95010219	360914.81	4749566.00	1345.16	1345.16	0.00	DC	
	PT_TALL	1ST		425.98038		95010219	357744.81	4741276.50	1382.13	1407.00	0.00	DC	
	PT_SHORT	1ST		1005.94604		95010219	360914.81	4749566.00	1345.16	1345.16	0.00	DC	
	COALPILE	1ST		427.46155		95010209	361688.09	4749472.50	1330.04	1344.78	0.00	DC	
	BUILDING	1ST		161.04312		95010219	360944.81	4749476.50	1350.00	1350.00	0.00	DC	
	LINE	1ST		60.74339		95010305	360885.09	4749621.00	1343.80	1343.80	0.00	DC	
24-HR	ALL	1ST	Avg. Conc.	193.64302b	ug/m**3	95010224	360885.09	4749621.00	1343.80	1343.80	0.00	DC	
	PT_TALL	1ST		23.79762b		95010224	357744.81	4741276.50	1382.13	1407.00	0.00	DC	
	PT_SHORT	1ST		186.01639b		95010224	360885.09	4749621.00	1343.80	1343.80	0.00	DC	
	COALPILE	1ST		82.13929		95010124	361744.81	4749576.50	1328.00	1345.00	0.00	DC	
	BUILDING	1ST		20.02122b		95010224	360744.81	4749376.50	1352.00	1352.00	0.00	DC	
	LINE	1ST		14.51660b		95010224	361296.50	4749410.00	1346.78	1346.78	0.00	DC	

Summary of Total Messages

#	Message Type
0	Fatal Error Message(s)
0	Warning Message(s)
8	Informational Message(s)
1	Calm Hours Identified
7	Missing Hours Identified (5.83 Percent)